

3 1761 11848884 0

CAI
BSI
- 2002
R184

Research Paper Series

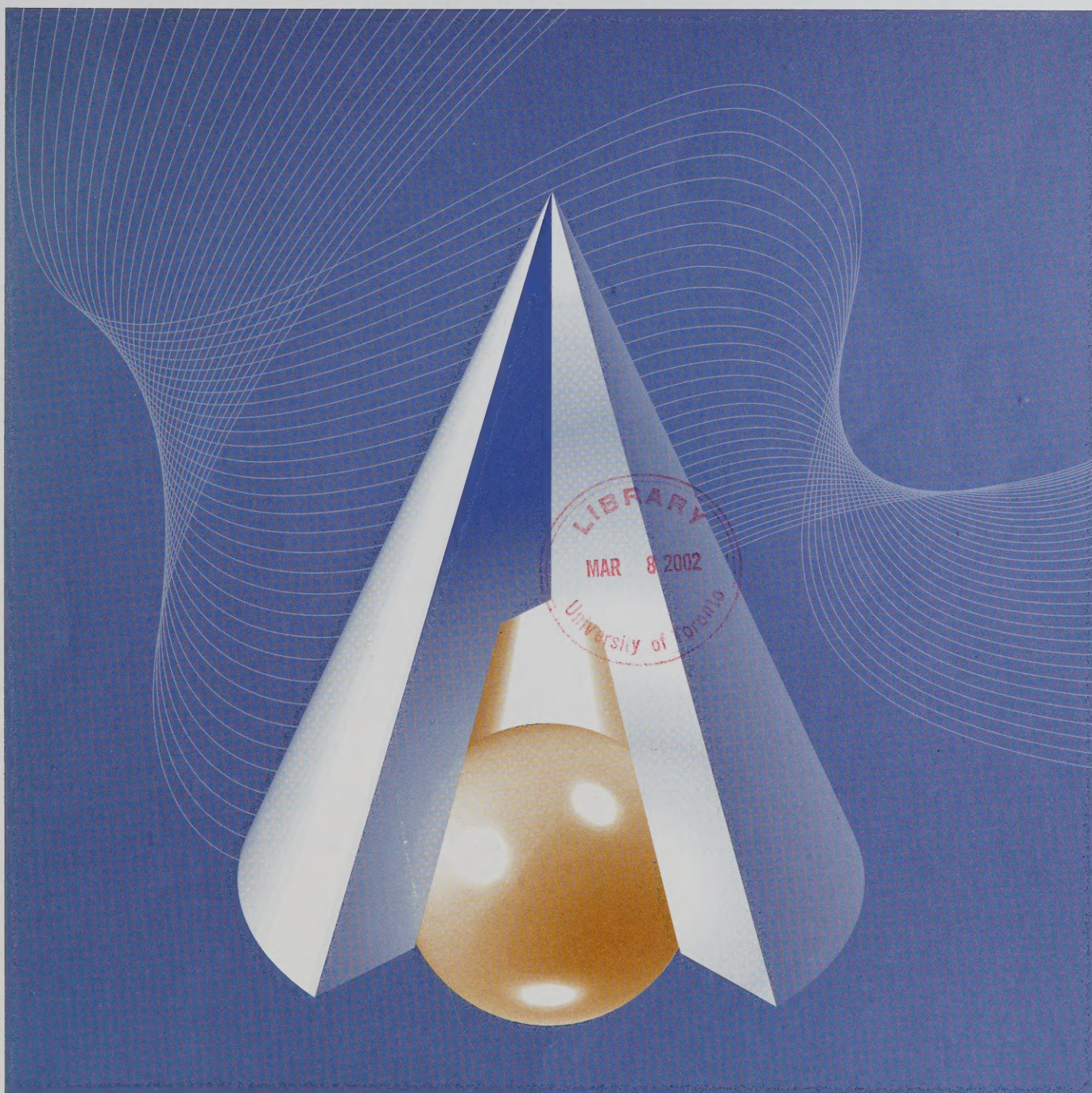
Analysal Studies Branch

Government
Publications

Winners and Losers in the Labour Market of the 1990s

by A. Heisz, A. Jackson, G. Picot

No. 184



Statistics
Canada

Statistique
Canada

Canada

ANALYTICAL STUDIES BRANCH RESEARCH PAPER SERIES

The Analytical Studies Branch Research Paper Series provides for the circulation, on a pre-publication basis, of research conducted by Branch staff, visiting Fellows and academic associates. The Research Paper Series is intended to stimulate discussion on a variety of topics including labour, business firm dynamics, pensions, agriculture, mortality, language, immigration, statistical computing and simulation. Readers of the series are encouraged to contact the authors with comments, criticisms and suggestions. A list of titles appears inside the back cover of this paper.

Papers in the series are distributed to Statistics Canada Regional Offices, provincial statistical focal points, research institutes, and speciality libraries. These papers can be downloaded from the Internet at www.statcan.ca.

To obtain a collection of abstracts of the papers in the series and/or copies of individual papers (in French or English), please contact:

Publications Review Committee
Analytical Studies Branch, Statistics Canada
24th Floor, R.H. Coats Building
Ottawa, Ontario, K1A 0T6
(613) 951-6325

Winners and Losers in the Labour Market of the 1990s

by A. Heisz*, A. Jackson**, G. Picot***

No. 184

11F0019 No. 184

ISSN: 1205-9153

ISBN: 0-662-31494-8

Price: \$5.00 per issue, \$25.00 annually

Business and Labour Market Analysis Division
24-F, R.H. Coats Building, Ottawa, K1A 0T6

*Statistics Canada (613) 951-3748

**Canadian Council on Social Development

***Statistics Canada (613) 951-8214

Facsimile Number: (613) 951-5403

The paper is available on Internet: (www.statcan.ca)

February 2002

This paper represents the views of the authors and does not necessarily reflect the opinions of Statistics Canada.

Aussi disponible en français

Witnesses and Factors in the Labour Market of the 1990s

by A. Heston, A. Jackson, C. Pissarides

No. 184

11/07/94
1/25/120012
120012-120012

Price 24.00 per copy, 24.00 per copy

The paper is concerned with the labour market in the 1990s. It discusses the role of the state in the labour market, the role of the private sector, and the role of the public sector. It also discusses the role of the state in the labour market, the role of the private sector, and the role of the public sector.

1. Introduction

This paper is concerned with the labour market in the 1990s. It discusses the role of the state in the labour market, the role of the private sector, and the role of the public sector.

2. The role of the state in the labour market
3. The role of the private sector in the labour market
4. The role of the public sector in the labour market

Table of Contents


Introduction	1
Why might relative incomes have changed in the 1990s?	2
Change in trade and technology	2
New employment arrangements	2
The rapidly increasing human capital of Canadian workers	2
Changes in the institutional landscape	3
Aggregate demand during the 1990s	3
Changes in income and earnings inequality	4
Changes in relative earnings	8
Declining real earnings among young workers, particularly men	8
No marked increase in the wage premium for higher education in Canada among all workers, a rising premium for younger workers	11
The shifting relative labour market position of men and women	13
Educational attainment is rising faster for women	13
The male-female earnings gap is declining	14
Employment indicators improving for prime aged women relative to men	17
Low-income trends in the 1990s	18
The low-income rate	19
Canada's low-income standing internationally	21
Depth of low-income	22
Persistence of low-income	23
Summary	25
Conclusion	25
Bibliography	27

ABSTRACT

This paper examines the Canadian labour market during the 1990s and contrasts it to prior decades, with a special focus on distributional outcomes. It discusses changes in relative earnings between groups, changes in relative labour market outcomes of women and older workers, changes in earnings and income inequality, and changes in low-income.

Keywords: income inequality, earnings, low-income

The first volume of the Cambridge Latin Texts (CLT) series, published in 1985, was a landmark in the history of Latin studies. It was the first time that a complete edition of a Latin text had been published in a single volume. The series has since grown to include many other important Latin texts, and it has become an essential resource for scholars and students of Latin.



Digitized by the Internet Archive
in 2024 with funding from
University of Toronto

Introduction

The 1990s labour market is thought to have been different in many ways from earlier decades. These differences can influence income levels, distributions and the relative earnings of various groups. For example, the “new economy”, spurred by the computer technology revolution and expanding international trade, has created new opportunities for many people, but also may have left behind less skilled workers. New employment relationships have become increasingly popular, as reflected in the rising number of workers who are self-employed. The very rapid growth in the educational attainment of workers, particularly among younger women and older workers, has certainly influenced relative earnings, and likely resulted in firms significantly altering their production processes. This again influences the relative wages of the less and more highly skilled workers through shifts in labour demand. Changes in public institutions and transfer programs has no doubt affected the incomes of less well off Canadians. Finally, all these factors occurred in the context of slow macro-economic growth, at least for the first half of the decade.

Within this environment, this paper asks what has happened to the relative pay of various workers and the distribution of income among families? What groups of workers have gained and lost as a result of these changing patterns of work? The primary objective of this paper is to present results on the distribution of income in Canada, which we hope will serve as a useful introduction to this subject. This paper is descriptive in nature and draws on previously reported findings from many different sources.

The paper focuses on four major topics: (1) earnings and income inequality; (2) the relative earnings of young and old, and more and less educated; (3) the changing relative position of men and women; and (4) changes in low-income in Canada during the 1990s.

Earnings inequality rose modestly for men during the 1990s (compared to faster increases in the 1980s), but inequality changed little for women. For workers as a whole (men and women together), there is little evidence of rising earnings inequality, at least to 1997. However, at the family level earnings inequality did rise over the 1990s, driven largely by changes in family formation patterns. Through the middle 1990s inequality in family disposable income (after taxes and transfers) remained stable, as it had for the past few decades in Canada. Generally speaking the tax/transfer system prevented rising family earnings inequality from translating to rising family disposable income inequality, although there is evidence that family income inequality started to rise in the later 1990s.

However, aggregate inequality trends often mask significant changes in relative wages. Even within the context of little change in earnings inequality, there can be significant movement in the relative wages of various groups, movements that often offset one another when added together. During the 1990s there was a continued decline in real wages among young men overall, but wages for young university educated men and women rose in the last years of the decade. The relative position of women has continued to improve in terms of labour market outcomes and wages relative to men.

Low-income trends are significantly influenced by the business cycle, generally rising in recessions and falling in expansions. But during the 1990s, as the weak expansion took hold through the 1993 to 1996 period, the low-income rate did not fall as expected, but continued to rise. The result was

that during the latter half of the 1990s in particular, both the low-income rate (the share of the population in low-income) and the low-income gap (the depth of low-income) was higher than comparable periods during the 1980s, at least among the non-elderly population.

Why might relative incomes have changed in the 1990s?

Following are five broad factors which help to explain why incomes and work arrangements of Canadians may have changed during the 1990s.

Change in trade and technology

Shifts in labour demand associated with trade and technology are thought to have resulted in considerable structural change in the economy. At the core of this, workers with more skills or experience are seen to be in greater demand, while other workers are left behind. All else equal, this would result in increasing relative wages for more highly skilled workers (relative to the less skilled). If the supply of high skilled workers rose along side demand, then the impact of increased demand for high skilled workers on wages could be offset by increase labour supply. The relative shifts in labour demand for the more or less highly skilled could potentially affect either relative wages or employment levels. In a country where wages are comparatively rigid, the impact of technological change may result in declining relative employment for less skilled workers rather than changing relative wages. This is sometimes called the “skill biased technological change” hypothesis since technologies are thought to favour the outcomes of skilled workers relative to unskilled workers.

New employment arrangements

At the same time, many firms changed the way they manage their workforces. “Downsizing” and “contracting out” became dominant buzzwords of the 1990s. Self-employment, which by nature is a less stable employment relationship than traditional “paid” work, grew substantially as a fraction of total employment in Canada.

Change in the way firms manage their workforces may have affected labour market performance. Betcherman and Lowe (1997) argue that there are six threads that run through employers’ search for a new model of management: global integration, technological change, innovations in work organization, business rationalization, the pursuit of high performance workplaces, and new forms of labour relations. To date, we know little about the extent to which most of these phenomena are taking place in Canadian firms, let alone their impact on labour market outcomes or the income of Canadians. Osberg, Wein and Grude (1994) provide interesting case study analyses describing how new workplace management principals have affected employment relationships at some Nova Scotia employers.

The rapidly increasing human capital of Canadian workers

While the above mentioned factors reflect changes in labour demand, labour supply changes were perhaps equally as dramatic. Most notably, the supply of highly educated workers continued to increase at a remarkable rate in the 1990s, spurred on by the expansion of the post-secondary

education system that started in the 1960s, and the retirement of much less educated cohorts of workers (Riddell, 1995). Within the context of a general rise in the educational attainment of workers, there has also been a shift in relative educational levels. In particular, the educational attainment of older workers and younger women has been rising faster than that of young men. Given the strong association between education and earnings, shifts in relative educational attainment will contribute to shifts in relative wages. The experience levels of Canadian workers also rose during the 1990s, as the workforce aged due to the maturation of the baby boom generation. Because of rising education levels and experience, the human capital embedded in Canadian workers rose significantly. Finally, historical increases in women's participation rates and their rapidly rising educational attainment reflect important social changes in Canada that potentially have an impact upon the supply of skilled workers, the relative earnings of men and women, and the income of families.

Beyond the direct impact of a more educated, experienced workforce on relative and real earnings, Acemoglu (1998) and Beaudry and Green (1999) argue that firms invested more in technology in order to take advantage of the rising educational attainment of workers. This hypothesis argues that the increased educational attainment of the workforce has encouraged firms to alter their production methods to make use of these higher skills. If firms invest strongly in technology, this tends to push down demand for unskilled workers. This argument stands in contrast to the skill biased technological change argument where it is technology that is the prime mover.

Changes in the institutional landscape

The institutional landscape was also altered during the 1990s. Substantial revisions to Employment Insurance (EI) could potentially influence structural unemployment, employment and the income of low-income Canadians relative to earlier decades. The major revisions to the social assistance system in many provinces in the late-1980s (expansion) and mid-1990s (contraction) and the introduction of the child tax benefit system by the federal government could also affect incomes and employment among low-income Canadians. Minimum wages have changed little since the early 1980s, but the unionization rate has fallen (Sargent, 2000). Fortin and Lemieux (1997) found that declining real minimum wages, falling unionization, and deregulation were important determinants of rising wage inequality in the U.S.

Aggregate demand during the 1990s

Finally, all these changes took place within a national context of weak aggregate demand which characterized the economy for most of the decade. Real gross domestic product grew at almost 3% per year over the 1980s, but at only 1.8% per year from 1990-1998. Associated with weak demand was weak employment growth rooted in stagnant hiring. The final years of the decade were years of strong growth however, with the economy posting 4.5% and 4.7% real growth rates in 1999 and 2000 respectively. Canada's performance in 2000 was impressive compared with other G7 nations, with only the U.S. posting faster expansion (Cross, 2001). Growing aggregate demand translated into growing employment, as the unemployment rate fell to 6.8%, its lowest annual level since the current labour force survey began in 1976. Mishel, Bernstein and Schmitt (2001a) argue that persistently low unemployment was a major factor behind faster wage and

income growth in the U.S. of the late 1990s. Persistently low unemployment, it is argued, helped raise growth in productivity and gave workers opportunity to shift away from contingent jobs. Changes in aggregate demand over a business cycle influence both relative and real wages. Earnings inequality and low-income rates tend to increase in economic contractions and fall in expansions. This is an important consideration when studying distributional trends. Often one is attempting to determine if there are structural (i.e. longer-term and more permanent) changes in inequality and relative earnings. It is necessary to abstract from cyclical changes in aggregate demand and its effect on inequality to achieve this.

Changes in income and earnings inequality

Few labour market issues have evoked as much interest in the past two decades as earnings and income inequality. Differing trends among countries, particularly between Canada and the U.S., often lead to confusion regarding Canadian outcomes. Adding to the confusion is the fact that trends may differ depending upon whether one is referring to individual earnings inequality, inequality in family market earnings, or inequality in family disposable income. This review focuses on all three levels, and contrasts outcomes with those of the U.S.

Why focus on all three levels? Earnings inequality (wages from jobs) provides a window on how the labour market is distributing employment earnings among individual workers. It is primarily a reflection of the interaction of labour supply and demand forces, as well as the effect of institutional features of a labour market (e.g. labour legislation, minimum wage levels, social assistance and Employment Insurance (EI) regulations, etc.). Family market earnings inequality simply places individual workers into families, determines family earnings, and adds investment earnings. This relates more to the "welfare" of Canadians than individual earnings inequality (which is more of a reflection of events in the labour market), since it is concerned with family outcomes.

Finally, inequality in disposable family income is the level at which most analyses concerned with welfare or well-being focus. Social transfer income (e.g. social assistance, public pensions, EI benefits, tax credits, etc.) is added to market income, and the distributive effects of taxes are included. This provides a measure of how all money income available to Canadian families is distributed. Changes in the inequality at this level reflect the distributional outcomes driven by labour market forces, government transfer and taxation policies, and social forces affecting family formation.

Earnings inequality rose in a number of countries, including Canada, U.S. and the U.K. between the 1970s and 1980s. There was a substantial fall in the earnings of lower-paid workers, particularly males, while the earnings of the higher-paid either remained stable or increased (Beach and Slotsve, 1996; Morissette, Myles and Picot, 1994). The gini coefficient is a well-known summary measure of inequality. This measure takes on values between 0 and 1, a higher value indicating that earnings inequality is greater, and the variation in earnings among workers has increased.

Table 1
Inequality in Individual Earnings, Family Market Earnings and Disposable Family Income

	Gini Coefficient			
	1974	1985	1995	1997
Individual Employment Earnings*				
Canada				
Men	0.351	0.392	0.402	0.397
Women	0.407	0.426	0.421	0.411
Both	0.406	0.428	0.423	0.418
U.S.				
Men	0.377	0.413	0.456	0.456
Women	0.425	0.428	0.441	0.439
Both	0.437	0.446	0.467	0.466
Family Market Earnings**				
Canada	0.389	0.402	0.427	0.423
U.S.	0.421	0.459	0.501	0.502
Family Disposable Income***				
Canada	0.303	0.293	0.291	0.292
U.S.	0.327	0.355	0.379	0.392

* Includes paid employment plus self-employment earnings. Includes persons aged 18-64 who earned more than \$500 during the year.

** Includes employment earnings plus investment income. Family earnings are adult equivalent adjusted (to account for economies of scale associated with larger families) and the individual is the unit of analysis. Based on economic families.

*** Based on economic families. Family income is adult equivalent adjusted, and each individual is assigned the adult equivalent adjusted family income. The individual is the unit of analysis.

Includes employment and investment earnings, pension, social transfer income and taxes paid.

Source: Wolfson and Murphy (2000).

Earnings inequality tends to rise in recessions and decline in economic expansions, and hence when seeking longer-term trends, the years considered should be in the same part of the business cycle (or the cyclical variation removed from the series). In Canada, the gini for individual employment earnings among men rose from 0.351 in 1974 to 0.392 in 1985 (up 11.7%), then a lesser increase to 0.402 in 1995 (up 2.6%) (Table 1). Among women the changes were less significant, up 5.4% between 1974 and 1985 and steady between 1985 and 1995. With the improving economy between 1995 and 1997, ginis fell for men and women. In contrast, earnings inequality for men in the U.S. rose steadily, up 9.5% between 1974 and 1985 and up 10.4% between 1985 and 1995. As in Canada, changes in earnings inequality among American women was more muted.

However, with the rise in the share of women working, the increased educational attainment of young women, and the continued movement of younger women into traditionally "male" occupations, women and men are becoming increasingly integrated in the labour market. From a labour market perspective, the distinctions between them, while still very evident, are declining. Hence, it is useful to view earnings inequality from the perspective of all workers, men and women combined, and think about a single labour market. Earnings inequality among all workers rose through the 1980s, but increased little in the 1990s in Canada. The gini for all workers rose from

0.406 to 0.428 between 1974 and 1985. By 1995, however, a year that is roughly in the same position in the business cycle as 1985, no increase was evident, and the gini had fallen slightly by 1997. Although individual earnings inequality rose in the 1980s, there is little evidence of strong increases in Canada in the 1990s (Green, 1999; Picot, 1998; Wolfson and Murphy, 2000). In the U.S., on the other hand, earnings inequality continued to increase to 1997 (Table 1).

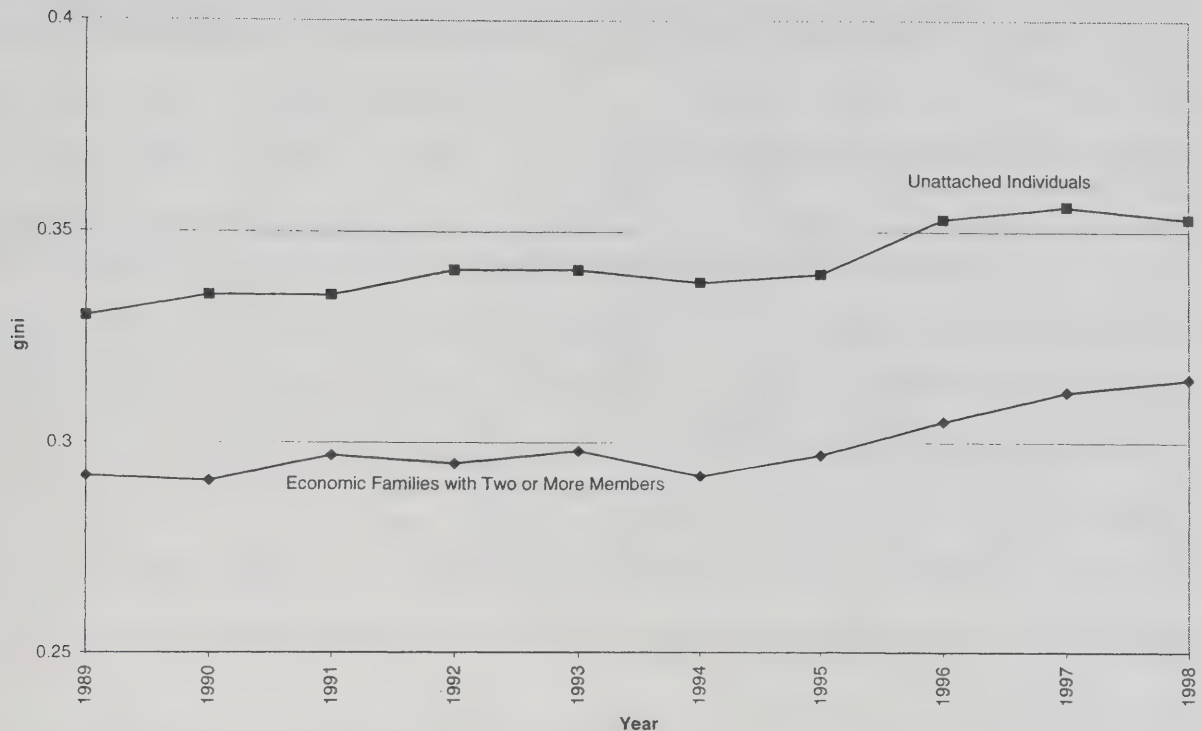
However, earnings inequality represents a very broad and general indicator of distributional features of the labour market. No increase in inequality, as in Canada's case during the 1990s, does not imply that there were not significant redistributional events affecting particular groups, and substantial shifts in relative wages. Such movement can be offsetting, so that while there are important changes in the earnings of one group relative to another (say younger men compared to older men, or women compared to men), overall inequality may not be seen to increase. These and other trends offset each other so that among all workers, the distribution of employment earnings changed little in the 1990s (Picot, 1998).

When earnings are aggregated to the family level, inequality is seen to continue increasing in the 1990s. Data in Table 1 are adult equivalent adjusted, so change in the size of families is accounted for and the results include individuals and families. The gini for family market earnings inequality rose from 0.389 in 1974 to 0.402 in 1985, and continued to rise to 0.427 in 1995 (and 0.423 in 1997). From a welfare perspective, this is perhaps a more useful measure of earnings inequality than is individual earnings. The differences in outcomes between family and individual earnings inequality primarily reflects changes in marriage and family formation patterns. Increasing numbers of single parent families (who tend to have low family earnings) and an increasing tendency for "like" to marry "like" (i.e. low earners marrying low earners, high marrying high) resulted in rising family market earnings inequality, even though individual earnings inequality did not rise in the 1990s (Zyblock, 1997; Wolfson and Murphy, 2000).

When considering income measures only, as we are here (i.e. excluding references to wealth and other aspects of economic well-being) perhaps the best reflection of changes in the relative "economic welfare" of Canadians is inequality in family disposable income. This reflects the distribution of total money income available to families, including earnings, pensions, social transfers and other market and non-market sources of income, and also accounts for the effect of personal income taxes on inequality. There has been little change in family income inequality throughout the 1970s, 1980s or most of the 1990s in Canada. The gini was 0.303 in 1974, 0.293 in 1985, and 0.292 in 1997 (Table 1). Generally speaking family income inequality has changed little during the past 30 years. This is because employment earnings losses among lower income families were largely replaced by increases in social transfer payments (e.g. social assistance, EI benefits, rising public pension income received, child tax credit, etc.) throughout the 1980s in particular, preventing inequality from rising. More recent data does suggest that during 1997 and 1998 there may have been an increase in family income inequality. Chart 1 shows gini coefficients from 1989 through 1998. For families only (excluding unattached individuals), the level of disposable income inequality was steady from 1989 through 1995 at a 7-year average of 0.294, and rose to between 0.312 and 0.315 in 1997-1998. Similarly, disposable income inequality among unattached individuals was steady between 1989 and 1995 at an average of 0.337, rising to an average of 0.354 between 1996 and 1998. However, these figures are not adult equivalent adjusted, and changes in

data collection over this period may also have affected these results¹. More research is needed to better understand the change in family income inequality during the late 1990s.

Chart 1: Inequality of Family Disposable Income, GINI coefficients



Statistics Canada Cat. No. 75-202-RPE. Income in Canada. 1998.

In the U.S. on the other hand, family income inequality has increased steadily. The gini rose from 0.421 in 1974, to 0.459 in 1985, and 0.502 by 1997 (Table 1). Faced with a similar increase in earnings inequality as in Canada during the 1980s, the U.S. transfer system did not respond in the same manner to prevent increases in inequality (Blank and Hanratty, 1993). Much of the common perception in Canada that family income inequality has increased during the past three decades may well stem from these American results.

As noted earlier, inequality and relative wages can change significantly over the business cycle. In particular, during periods of low unemployment and relatively high labour demand late in an economic expansion, the relative position of low wage workers can improve. Mishel, Bernstein and Schmitt (2001a) examine wage inequality in the U.S. in the 1990s. They found that low earners were closing the gap with middle and working class workers since 1995, while the top continued to pull away from the middle. Regarding family income inequality, the top continued

¹ Adult-equivalent adjustment is a method of adjusting family income so that family size, and the economies of scale associated with larger families, are accounted for. The data in Table 1 are adult-equivalent adjusted, those in Chart 1 are not. If family size is changing over time, it is desirable to "adult-equivalent adjust" the results. Regarding data sources, the data in Table 1 come from the Survey of Consumer Finances only. It was discontinued after data year 1998. In Chart 1 data up to 1995 are from the Survey of Consumer Finances, while from 1996 to 1998 data are from the Survey of Labour and Income Dynamics.

to pull away from the middle and the middle pulled away from the bottom in the second half of the 1990s. They argue that persistently low unemployment in the later 1990s, coupled with rising minimum wages in that decade (after declines in the 1980s) contributed to improvement at the bottom of the distribution, while globalization, deunionization and the shift to low-paying industries have kept wages at the top growing. In contrast, distributional changes appear unrelated to technological change. One piece of evidence they find is that high tech sector employers have not been the source of growth in employment or been wage leaders (in terms of growth) in the U.S.

Changes in relative earnings

Changes in inequality are generally related to changes in relative earnings among groups, for example, of older workers compared to younger, and more versus less skilled. However, the two concepts are not synonymous. Inequality trends include not only changes in relative wages *among* groups (defined by age, education, gender, etc.), but also *within* groups. And changes in “within” group inequality have been a very important, and often ignored, part of the inequality story. Furthermore, aggregate inequality measures, such as the ginis presented in the earlier section, can show little change, while beneath this apparent stability there can be important, and offsetting, movement in relative wages of various groups. Here, we focus on the changes in the relative earnings of older and younger workers, the more and less educated, and between men and women. These are topics that have received considerable attention during recent decades.

Declining real earnings among young workers, particularly men

Cross-sectional data clearly indicate an increasing earnings gap between younger and older workers, particularly among men, during the 1980s and 1990s. This was related mainly to a fall in the real earnings of younger male workers (Betcherman and Morissette, 1994; Picot, 1998). Real weekly earnings of younger men (under 35) working full-time fell through both the recessions of the early 1980s and 1990s. Modest increases for 18-24 year olds during the 1980s expansion, and for both 18-24 and 25-34 year olds during the late 1990s expansion failed to fully offset these declines. Meanwhile, earnings rose for older men (aged 45-64) further increasing the wage gap (Chart 2). For women, earnings declined only for the youngest group of 18-24 year olds (Chart 3).²

Rising relative wages for older men might suggest an increase in returns to experience. Young workers may start out with relatively low earnings, but eventually “catch up” as they age and gain experience. However, this does not appear to be the case. Beaudry and Green, 2000, found that if one examines successive cohorts of men as they entered the labour market and gained experience, the age-earnings profile has been shifting downward for more recent cohorts. Wages have fallen for young men as they enter the labour market, and their wages do not catch up to those of earlier cohorts as they gain experience. This decline in wages is observed for both the more and less highly educated. More recent work using data from a longitudinal graduates survey

² A consistent series for wages up to 2000 is not yet available. For the indices in Charts 2, 3 and 6 we use the Survey of Consumer Finances (SCF) data up to 1997, then estimate expected growth in the wage series from 1997 to 2000 using Labour Force Survey (LFS) data.

also uncovers similar trends for male bachelors graduates, although the magnitude of the decline has been slight over the 1990s (Finnie, 2001).

Little is known regarding the cause of the declining real and relative (to earlier cohorts) earnings of young workers, males in particular. Changes in supply do not explain the drop since the supply of younger workers has been falling, not rising, both in absolute terms and relative to the overall supply of labour. This would tend to increase, not reduce relative wages.

Proponents of the skill biased technological change hypothesis draw a connection between increasing returns to skill, and changes in the distribution of earnings by age. They argued that skill biased technological change increased the demand for skills of all types and that rising male earnings inequality was consistent with increasing returns to experience or age (Juhn, Murphy and Pierce, 1993; Katz and Murphy, 1992; Bound and Johnston, 1992; Davis, 1992).

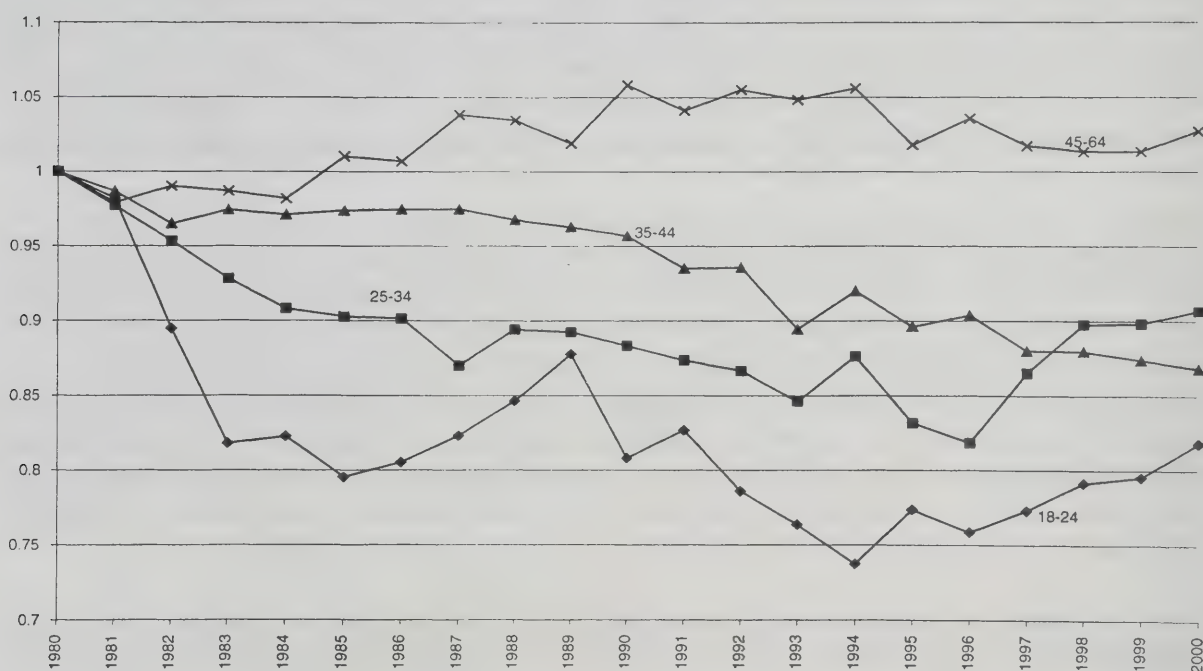
As was the case of the role of technological change in explaining the shifts in relative earnings by education level, some argue the role of technological change in explaining falling real wages among young men may also have been overstated. Reviews by Green (1999) and Sargent (2000) argue that the changes in labour market outcomes and industrial structure that prevailed in the 1990s are not necessarily those that one might expect to see in an economy where technological change was driving structural change. Changes in information technology have clearly had an impact on labour market outcomes for workers, and such change is part of the evolution of the 1990s labour market. But there are important phenomenon that cannot be explained and are at times inconsistent with the belief that technology is the sole, or perhaps even primary, driving force.

For example, earnings inequality in Canada has risen and continues to rise among men, but has changed little among women (Picot, 1998). Green (1999) asks how one can reconcile this with technological change, which is presumably continuing into the 1990s, and should affect women as well as men. Also, as discussed above, wages have declined across cohorts—increasing returns to experience have not taken place within cohorts—so the argument that increasing wage premiums for experience is consistent with the effects of technological change holds little validity, (Beaudry and Green, 2000b). And why have earnings of young men been falling if technological change in the shift to the knowledge based economy were boosting demand for skilled labour? It is among the young that computer-related skills are the highest.

In the U.S. where the increase in the wage premium (for education and experience) has been substantial, the increase accounts for only about 45% of the overall rise in inequality, the remainder is found within groups of similar educational attainment and experience. (Mishel and Bernstein, 2001b) Hence, even if the rise in the education and experience wage premium were fully driven by technology, that leaves much of the overall increase in earnings inequality unexplained. However, technology is likely only one of several factors which explain this premium, others being a drop in the real federal minimum wage over the 1980s and a continued decline in unionization in the U.S. (Mishel and Bernstein, 2001b). These and other inconsistencies in the evidence supporting the skill biased technological change hypothesis have encouraged researchers to look to other explanations, such as the impact of changes in institutions as argued by Fortin and Lemieux (1997).

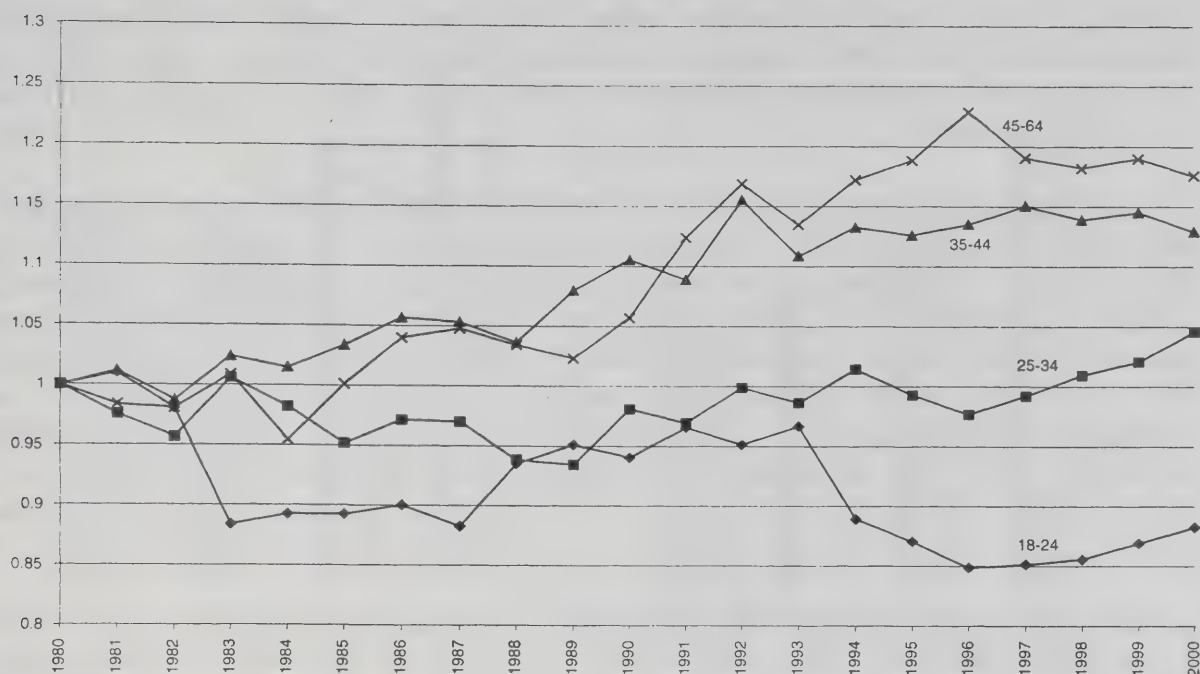
It may be that changes in labour supply partly explain why young males in particular saw their relative earnings fall. This relates in particular to the rising education of older workers and younger women. In 1981, 16.4% of men 25 to 34 years old had a degree, compared with 11.8% of men 45 to 54. By 1995 this gap had disappeared, each group rising to 22.2% and 22.5% respectively. Both age groups had become much more highly educated, but more so for older men. The gap did not close to the same extent for women, largely because of the dramatic increase in the educational attainment of the young: 16.6% of younger women held a degree in 1981 compared to 6.9% of older women. By 1995, this had risen to 25.3% among the young (higher than for men), and 19.2% of older women. This rapid increase among workers 45 to 54 was related to the rapid increase in the university enrolment rates during the 1960s and early 1970s, and the fact that these cohorts are now moving into the 45-54 year old age group, replacing much less educated cohorts. Kapsalis, Morissette and Picot (1999) conclude that the changing relative educational levels of the young and old accounted for about one-quarter of the rising cross-sectional earnings gap between younger and older workers during the 1980s, and even a larger share during the 1990s. We discuss the declining educational advantage of young men in more detail later in this paper.

Chart 2: Indexed Median Earnings, Full Time Male Workers, \$1992



Source: Survey of Consumer Finances 1980-1997, Labour Force Survey 1997-2000.

Chart 3: Indexed Median Earnings, Full Time Female Workers, \$1992



Source: Survey of Consumer Finances 1980-1997, Labour Force Survey 1997-2000.

No marked increase in the wage premium for higher education in Canada among all workers, a rising premium for younger workers

When considering all workers, the basic facts suggest that through the 1980s and mid- 1990s there was no overall increase in the returns to education in Canada (Morissette, Myles and Picot, 1994; Bar-Or, Burbidge, Magee and Robb, 1993; Beach and Slotsve, 1996). This is in contrast to developments in the U.S., where the wage premium among the more highly educated has risen (Juhn, Murphy and Pierce, 1993; Freeman and Needels, 1991).

A developing literature examines the role played by technological change in explaining the phenomenon of increasing relative wages for the more educated in the U.S. The skill biased technological change hypothesis states that technological change has increased the demand for more highly skilled workers. This should result in increasing relative wages for this group (relative to the less skilled), unless wages were highly rigid, causing a shift in relative employment, or supply of educated workers rose enough to offset demand.

Interestingly, neither relative wages nor employment rates appear to have changed significantly among the more highly educated in Canada among workers as a whole. The relative employment to population ratios of the university to high school educated suggests that there has been no relative gain among the more highly educated in terms of the likelihood of being employed, although the likelihood of being employed has fallen for those with less than a high school education (Sargent, 2000). It is not so much that the relative position of the very highly educated improved, rather the position of the least educated deteriorated. An explanation for this stable pattern of relative earnings

in Canada that is consistent with the skill biased technological change hypothesis, is that the relative supply of highly educated workers increased in Canada at a rate that offset the increase in the relative demand. Increases in supply offset increased demand caused by technological change, resulting in little change in the relative labour market status of skilled and unskilled workers (Freeman and Needels, 1991; Murphy, Riddell and Romer, 1998). This is a commonly accepted explanation of the difference between Canada and the U.S. with respect to changing relative wages of the highly educated.

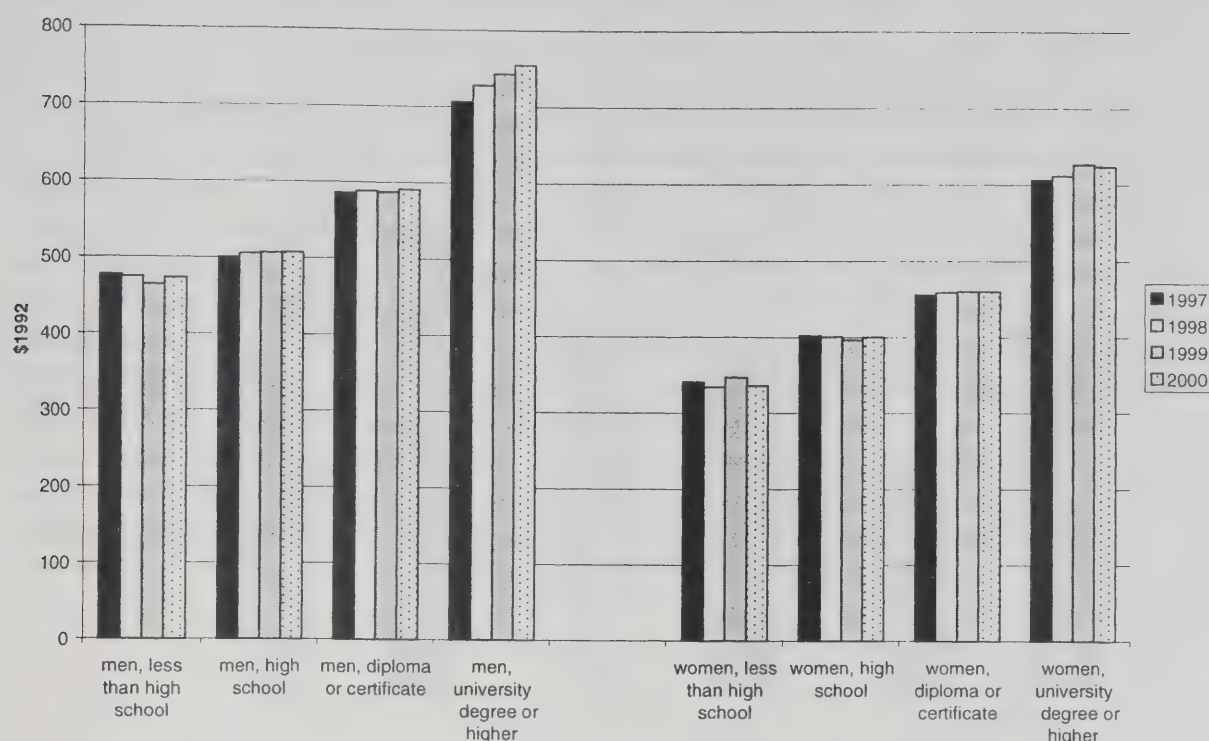
A second hypothesis recently put forth by Beaudry and Green (1999) argues that the role of technological change in causing the relative earnings gap in the U.S. may be overstated. They argue that firms invested more in technology in order to take advantage of the rising educational attainment of workers. This model, sometimes called the “endogenous technical choice” hypothesis argues that the increased educational attainment of the workplace has encouraged firms to alter their production methods to make use of these higher skills. When firms invest strongly in technology, this tends to push down demand for unskilled workers. In this scenario, it is the rising educational attainment of the workforce that is the principal cause of many of the changes in the relative wages. This possibility is also stressed in theoretical work by Acemoglu (1998).

A third explanation that has received less attention in Canada is that institutional factors underlie the changes in real wages. Fortin and Lemieux (1997) found that declining real minimum wages, falling unionization, and deregulation were important determinants of rising wage inequality in the U.S.

The relative merit of these proposed explanations continues to be debated. Most recently Beaudry and Green (2000) compare the changing structure of wages in the U.S. and Germany. Examining the past 20 years, they point out that while the educational composition of the workforces in the two countries evolved similarly, the wage premium for education rose more in the U.S. One explanation for this that was put forth by the OECD (1994) was that Germany had relatively rigid wages, and as a result “skill biased technological change” manifested itself in rising unemployment rates among the less skilled. Beaudry and Green offer the alternative hypothesis that the difference is because the U.S. under accumulated physical capital relative to human capital, while Germany invested in a more balanced manner. The faster accumulation of physical capital in Germany helped ensure sufficient demand and productivity gains for lower skilled workers that kept their wages from declining. The debate continues.

In any case, stating that there has been no increase in the education premium for workers in Canada obscures relative changes within some groups. Bar-Or, Burbidge, Magee and Robb (1993) examined wages by education group from 1971-1991 using Survey of Consumer Finances data and found that returns to higher education did not rise in the 1980s except for among the youngest age group (those with experience levels of 1 to 5 years), who saw modest increases. Furthermore, recent data from the Labour Force Survey shows that young university educated workers have seen real and relative (relative to the less educated) earnings increases in recent years. Chart 4 shows average real weekly wages for the 20-34 year old age group from 1997 (the first year the LFS collected wage information) to 2000. While other groups stagnated in earnings, men in particular with university degrees enjoyed small wage increases over these years.

Chart 4: Average Real Weekly Wages, 1997-2000 , Age 20 to 34



Source: Labour Force Survey.

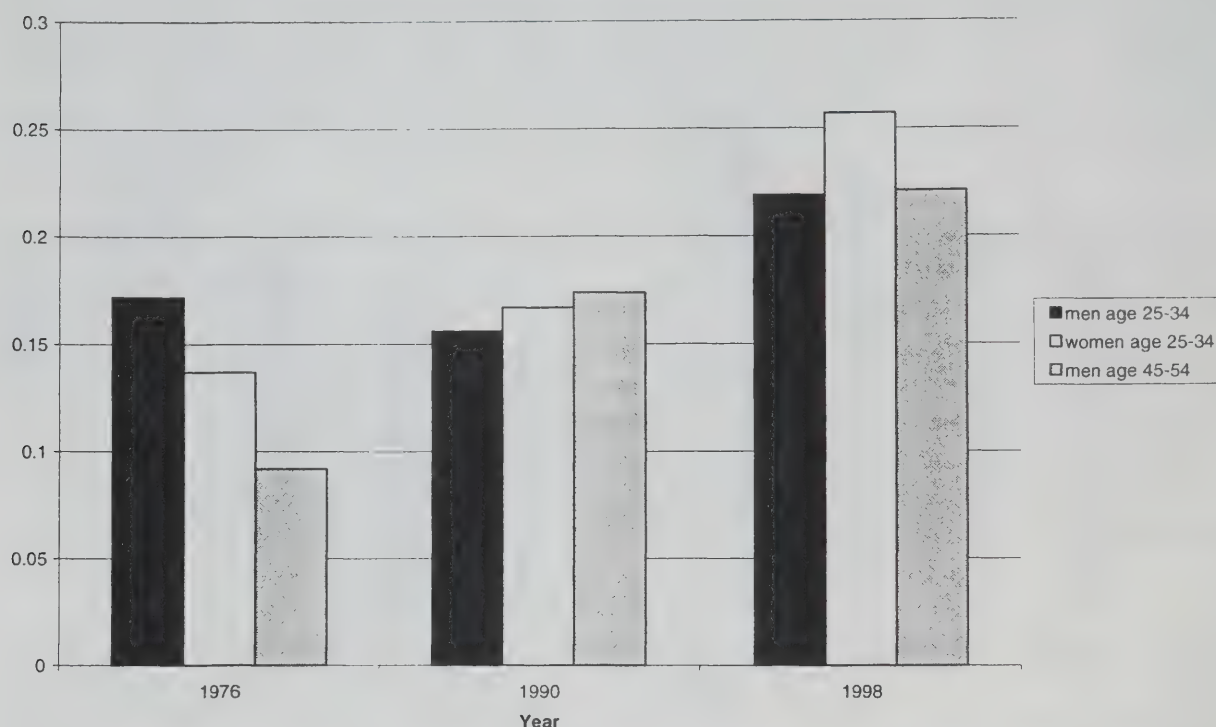
The shifting relative labour market position of men and women

The changing relative position of women and men is one of the more interesting labour market phenomenon of the past two decades, and one that may not be receiving the attention it is due. The changing relative position of women has several dimensions. Young women have rapidly increased their educational levels relative to men. They are occupying more jobs, and while wages remain lower for women, the gap is closing. Generally speaking, the likelihood of being employed has increased for women and declined for men, while that of being unemployed has risen for men, and fallen for women. The offsetting trends between these two groups are seen in earnings levels, earnings inequality, the likelihood of being employed (employment population ratios) and the likelihood of being unemployed. We discuss each of these in turn below.

Educational attainment is rising faster for women

There has been an increasing educational attainment of women, both in real terms, and perhaps more significantly, relative to men. For example, between 1976 and 1998 the fraction of women in the labour force with a university degree was increasing at 7.7% per year, compared to 4.2% for men. The result is that the gap between men and women regarding the share holding degrees disappeared by 1998. In fact, the educational advantage held by young men (over younger women and older men) in 1976 had more than disappeared by 1998 at which time a larger share of young (25-34) women than men held degrees (Chart 5).

Chart 5: Proportion of Population With University Degrees



Source: Labour Force Survey

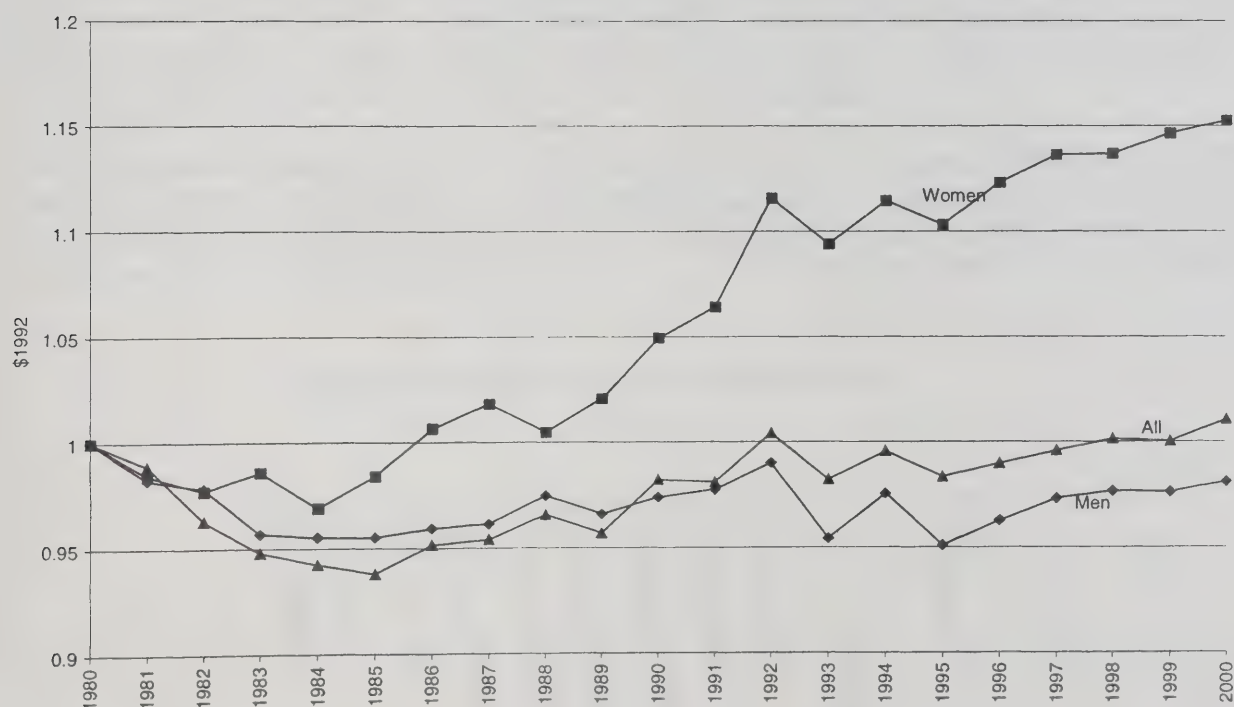
Since human capital is a major determinant of labour market outcomes, it should not be too surprising that the relative earnings, employment and unemployment of women are improving. However, there are likely other factors at play. Picot and Heisz (2000) noted that even after controlling for change in human capital characteristics (education and age), employment and unemployment outcomes deteriorated for men, but not for highly educated women, and relatively little for other women. And as will be shown below, even after controlling for broad education and age (experience) levels, women's earnings are rising faster than men's during the first half of the 1990s.

The male-female earnings gap is declining

While aggregate data indicate that women continue to earn less than men, the gap has been narrowing. The ratio of annual earnings of women to men working full-year full-time rose from 58.4% in 1967 to 72.5% in 1997 (Survey of Consumer Finances data). Annual earnings are not the best indicator however of relative wages, since they do not fully control for weeks worked in the year or hours worked per week which are known to be higher for men. Drolet (2000) finds that the raw hourly wage ratio of women to men was 80% in 1997, but that increased to 89% after controlling for a host of human capital, productivity related and industrial and occupational characteristics.

And over the 1990s, the aggregate earnings of women have been increasing much more quickly than that of men. The weekly earnings of female full-time workers displayed a significant increase in the 1990s compared to the 1980s, rising 13% between 1989 and 2000 (Chart 6). Weekly earnings were stable among comparable male workers. Controlling for age, education, full-time, part-time status and industry, produces much the same results. Kapsalis, Morissette and Picot (1999) ran wage equations for men and women (separately) in different age groups and computed expected weekly earnings controlling for industry, region, and full-time/part-time status. During the 1989-95 period, the growth in expected weekly earnings was greater for women than men (except for the university educated) (Chart 7). Basically, men's weekly earnings were declining and women's were rising. Evidence based on annual earnings suggests this phenomenon is independent of where in the earnings distribution one is located. The growth in annual earnings of women has far outstripped that of men across the entire earnings distribution. Between 1986 and 1995, two years in roughly comparable positions in the business cycle, women's annual earnings rose 10.6%, and men's fell by 1%. Except for women at the very bottom of the earnings distribution (where earnings rose by only 0.4%), earnings growth was between 9% and 11%. Men's earnings fell across the entire earnings distribution, except among those in the top two deciles, where there were earnings gains (Chart 8).

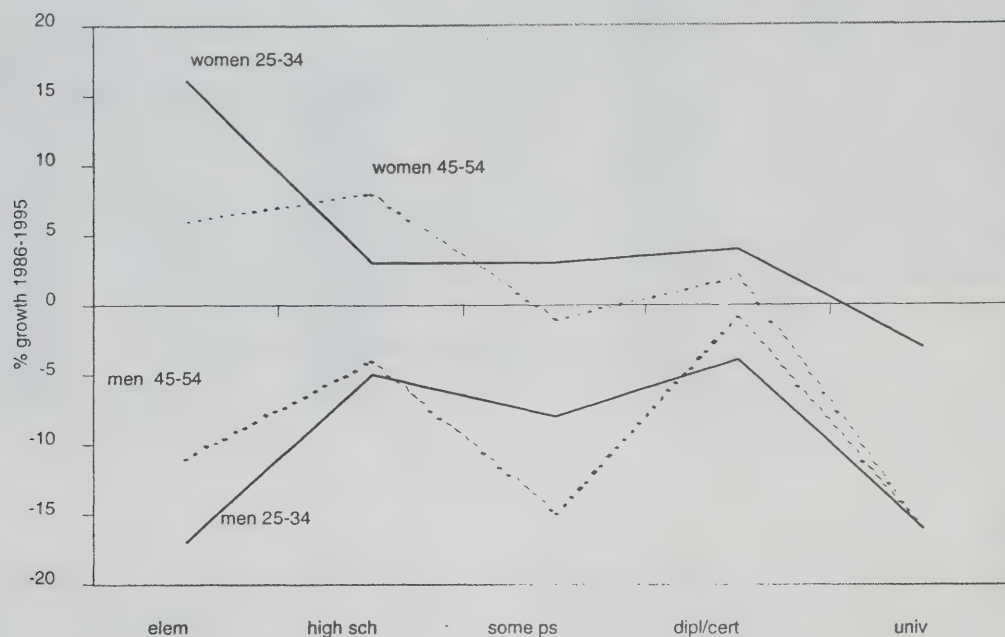
Chart 6: Indexed Median Earnings, Full-Time Workers



Source: SCF 1980-1997, LFS 1997-2000.

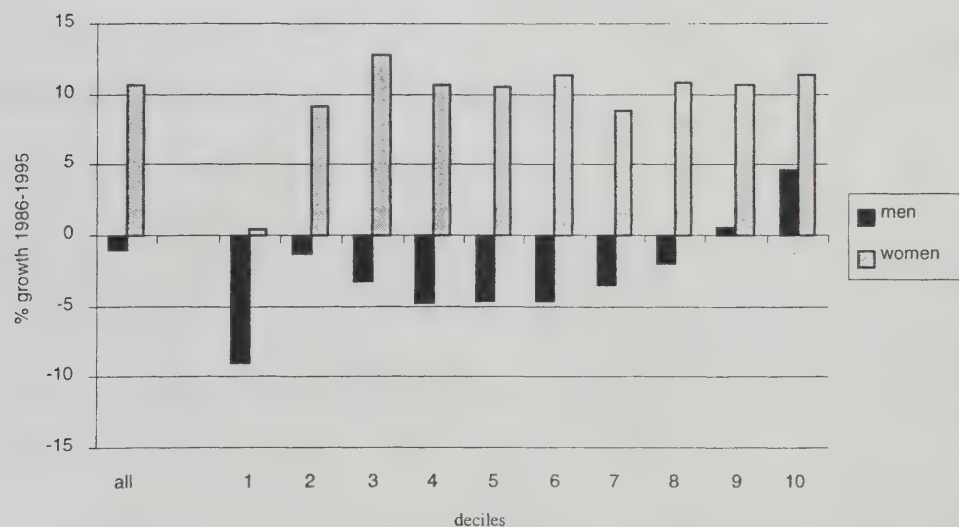
There are numerous possible reasons for these phenomena. Women are moving into higher paid occupations and fields of study at an increasing rate, and such effects would not necessarily be controlled for in the broad type of controls used in the work reported here. The wage gap has been narrowing for male and female graduates, and the higher the education level, the lower the gap. For the latest cohort of graduates in their study (1990), Finnie and Wannell (1999) found that the male/female wage gap for doctoral graduates had disappeared, at least during the five years following graduation.

Chart 7: Growth in Average Weekly Earnings, 1989-1995



Source: Kapsalis, Morissette and Picot, 1999.

Chart 8: Growth in Average Annual Real Earnings, 1986-1995



Source: Kapsalis, Morissette and Picot, 1999.

Employment indicators improving for prime aged women relative to men

Earnings growth was largely positive for women and stable or declining for men during the 1990s. This dichotomy is reflected in employment and unemployment outcomes as well. There may be special conditions influencing the outcomes of younger workers (changing employment patterns among students) and older workers (increasing early retirements) that could affect the relative change between men and women. Hence, we focus on prime aged workers, aged 25-54. Labour force statistics suggest that the position of prime aged men has deteriorated between the late 1980s and late 1990s, while that of women has improved. We computed average employment and unemployment rates for the 1987-1989 period, and compared them to average rates for the 1998-2000 period. Both periods are roughly at a comparable position in the business cycle (approaching the cyclical peak) and hence the comparisons represent a structural change between the decades, not just cyclical variation.

Labour force participation fell for men (by 2.7%), and rose for women (7.2%) (Table 2). The unemployment rate for men remained largely unchanged (falling 0.1 percentage points) but fell substantially for women (1.5 percentage points). Hence, while unemployment was higher among women than men during the 1980s, by 1998-2000 this was reversed. The employment population ratio fell for men (2.6%) and rose for women (8.9%). The one statistic which worsened for women was unemployment duration, which rose by 11.7% among women, but declined marginally among men (2.8%), comparing 1984-1986 to 1994-1996 which are the most recent years available. These changes to duration were more than offset by increases in the incidence of unemployment among men, and declines among women (by 15.7%).

There are certainly many reasons for this change in relative labour market position, including changes in the types of jobs held by women, and the industries in which they work. However, little is known regarding these relative shifts in earnings, employment and unemployment, and this remains one area requiring further research.

Table 2: Labour Force Statistics, 25 to 54 Year Olds Only

		1987-1989	1998-2000	% change	difference
Labour Force Participation Rate	All	83.2	84.6	1.6	1.3
	Men	93.6	91.1	-2.7	-2.5
	Women	72.9	78.1	7.2	5.2
Unemployment Rate	All	7.2	6.4	-10.2	-0.7
	Men	6.6	6.5	-2.0	-0.1
	Women	7.9	6.3	-19.5	-1.5
Employment to Population	All	77.3	79.1	2.4	1.9
	Men	87.4	85.1	-2.6	-2.2
	Women	67.2	73.1	8.9	6.0
		1984-1986	1994-1996	% change	difference
Inflows to Unemployment ^a	All	1.95	1.86	-4.4	-0.1
	Men	1.73	1.84	6.1	0.1
	Women	2.25	1.89	-15.7	-0.4
Duration of Unemployment (Months)*	All	4.3	4.4	2.5	0.1
	Men	4.6	4.5	-2.8	-0.1
	Women	3.8	4.3	11.7	0.4

a: fraction of the labour force entering unemployment

*1996 is the most recent year available for inflows to and duration of unemployment.

Source: Labour Force Survey

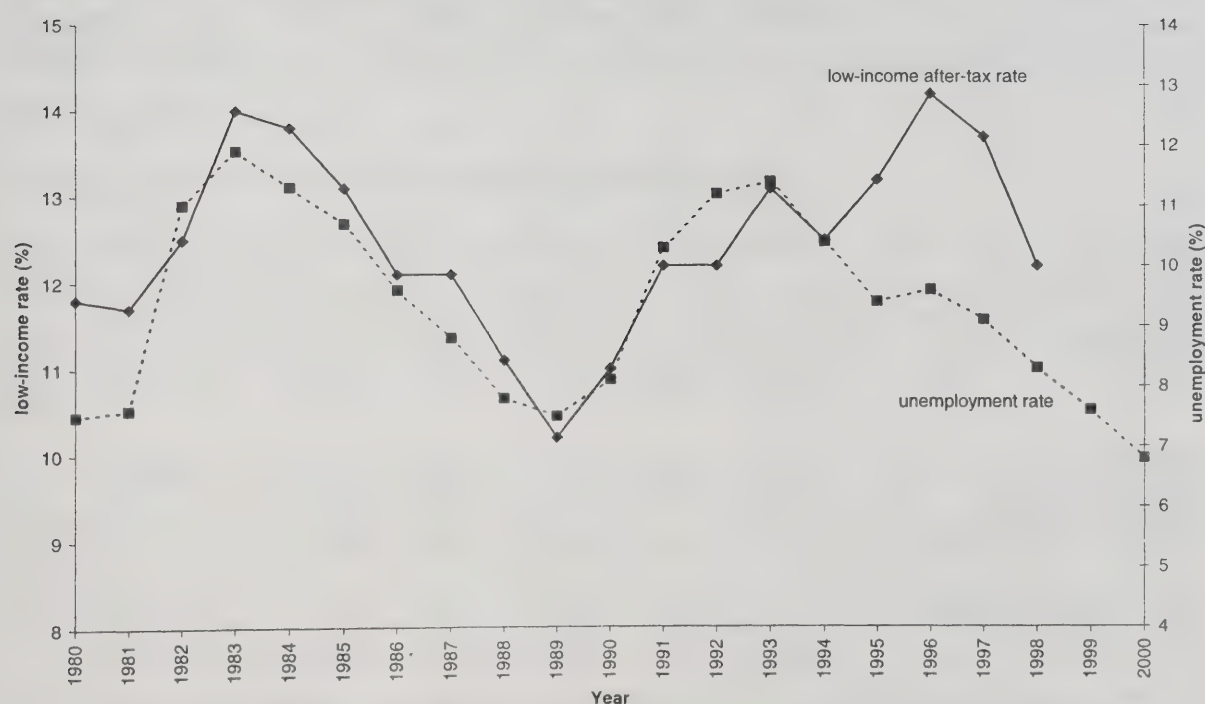
Low-income trends in the 1990s

While inequality measures indicate how income is distributed among all Canadians, low-income measures focus on the families at the bottom of the income distribution. Traditionally, analysis focuses on the share of the population below some low-income cutoff (the low-income rate), and asks whether this rate is rising or falling, and why. But it is also important to know whether the families in low-income are better or worse off than they were in the past. This is determined by the low-income gap (the income gap between the low-income cutoff and average family income among low-income families). Finally, another important dimension of low-income is its persistence. How long do families tend to stay in low-income once there. If families are “trapped” in low-income for many years, this represents a more serious issue than if families move in and out of low-income relatively quickly. This section discusses trends in these three components—the low-income rate, the low-income gap, and the persistence of low-income among Canadian families.

The low-income rate

There are a number of low-income cutoffs in use. If the income of a family fall below the cutoff, they are said to be in the low-income population. Here we use Statistics Canada's LICO (low-income cut-off) based on after-tax and transfer income (i.e. disposable income). In 1998 dollars, the post-tax LICO in a large urban centre was \$14,510 for a single person, and \$27,890 for a family of four. How has the low-income rate fared in the 1990s relative to the 1980s? In answering this question it is important to separate cyclical variation in low-income from longer-term trends. Low-income rates always rise in recessions, and fall during economic expansions. Chart 9 contains the rate of low-income among all Canadians based on after-tax income for the period 1980 to 1998. Also plotted in Chart 9 is the unemployment rate. Cyclical movements in the low-income rate mirrored cyclical changes in the unemployment rate, at least up to 1994 (the correlation coefficient over 1980 to 1994 was 0.85). Following that year, trends in low-income diverged from the unemployment rate, such that 1996 and 1997 were peak years for low-income despite improving labour markets. The low-income rate recovered somewhat between 1997 and 1998, but by 1998 had not fully returned to the level expected based on the business cycle.

Chart 9: Low Income Rate (left axis)
Unemployment Rate (right axis)



Source: Labour Force Survey, Statistics Canada Cat. No. 13-592. Low-income After Tax, 1997.

Table 3 provides data on persons in low-income (based on the post-tax LICO) for 1981, 1988, 1989—the cyclical peak year during the 1980s, for 1993—when the overall economic recovery began to take hold; and for 1998. As shown, the overall low-income rate for all persons in 1998 was 12.2%, down from 13.1% in 1993, but 1.1 percentage points above the 11.1% level of 1988, a year that is roughly in a comparable position of the business cycle. Overall the low-income rate

was somewhat higher during the 1990s than 1980s. It rose for four years following the end of the recession (1992), peaking in 1996. This increase occurred in spite of a slowly recovering economy, and falling unemployment. During the 1980s the increase lasted only one year following the recession end (1982), peaking in 1983. Different groups were affected in different ways. Low-income rates for seniors—already very low for seniors in families—fell over the 1990s. In contrast, low-income rates among the 18-64 population were higher in 1998 than in 1988, a year in roughly the same position in the cycle. This rise was observed both among singles (increasing 2.9 percentage points between 1988-98) and families (increasing 1.3 percentage points between 1988-98).

The low-income rate of children dropped from the cyclical high of 17.2% in 1996 to 13.8% in 1998. However, the rate in 1998 was still above the 12.5% posted in 1988, a comparable year in the business cycle. The low-income rate was higher in the late 1990s than late 1980s. The opposite trend was observed during the 1980s; the children's low-income rate fell from 12.5% in 1981 to 11.8% in 1989 (comparing cyclical peaks).

Table 3
Low-Income Rate: Persons in Low-Income After Tax (% of Group) and
% Composition of Low-Income Population

	1981	1988	1989	1993	1998	% of Low-income Population (1998)
All	11.7	11.1	10.2	13.1	12.2	100
Men	10	9.5	8.8	12	11.4	46.1
Women	13.5	12.6	11.5	14.3	13	53.9
Elderly						8.7
In Families	7.2	4.1	3.1	3.3	3	2
Single	49.1	30.6	27.3	26.3	20.8	6.7
Children (<18)	12.5	12.5	11.8	15.9	13.8	24.8
2 Parent Families	*	*	7	9.9	8.3	13
Single Parent Families	*	*	48	48.6	45.3	11.8
Age 18-64 In Families	7.3	6.8	6.4	8.9	8.1	35.9
Single, Age 18-64	29.3	31.0	27.9	32.7	33.9	28.4

Source: Statistics Canada Cat. No. 75-202-RPE. Income in Canada. 1998. Table 8.1 and Statistics Canada Cat. No. 13-592. Low-income After Tax, 1997 Table 3.

* Data are not available for these subgroups.

Why this increase in the incidence of low-income between 1988 and 1998? Picot, Morissette and Myles (2001) find that the key driver of the trend in the rate among the population under age 65 was the inability of the labour market to provide as much employment income to low-income working age households during the 1990s as in the 1980s. They find that of the 11% increase in the low-income rate over the 1988 to 1998 period, virtually all of the rise was associated with declines in employment earnings among families; changes in transfer benefits neither offset these changes in employment earnings (as they did during the 1980s) nor contributed directly to an increase in the low-income rate. During the 1993 to 1996 period alone, however, when the rate deviated from its expected trend based on movement in the unemployment rate (Chart 9), Picot, Morissette and Myles (2001) find that all of this somewhat unexpected increase in the low-income rate was due to changes in transfers (e.g. EI benefits, social assistance, child tax benefits, etc.) received by low-income families. Over the entire 1988 to 1998 period, the effects of the decline in benefits during the 1993 to 1996 period were offset by increases during other parts of the decade. Hence, over the decade as a whole the main story rests with poor employment earnings growth. This same decline in employment earnings among poorer families was observed during the 1980s as well, but rising social transfer payments more than offset the earnings decline, and the low-income rate actually fell. Social transfers did not offset earnings losses during the 1990s.

There was substantial variation by province, and the impact of changes in earnings on low-income was more severe in central and eastern Canada than in the west, due to the severity of the recession in this part of Canada during the early 1990s. The recession was less severe in the western provinces.

Canada's low-income standing internationally

On an international basis, Canada's standing varies, depending on which population group is considered. Although most studies of domestic low-income typically rely on Statistics Canada low-income cutoff, for international comparisons the standard is the low-income measure, or LIM. It sets the low-income cutoff at one-half the median family income in the country of interest.³

In the mid-1990s, the overall incidence of low-income after tax by this measure was 11.2% in Canada, much below the 17.7% rate in the U.S., but well above the 6.5% rate in Sweden (OECD, 1998b). Canada is in the middle of the pack of international comparisons when the focus is on low-income among children, but one of the best in terms of low-income among the elderly. The UN Agency UNICEF recently reported that the child low-income rate in Canada (falling below half of median household income) for the mid- 1990s is 15.5%, compared to 22.4% in the U.S. and just 2.6% in Sweden, but the low-income rate among the elderly, defined on the same basis, is just 4.8% in Canada, compared to 23.7% in the U.S. and 6.0% in Sweden. Osberg (2000) found that due to

³ This is a *relative* low-income measure, since the cutoff is set relative to the median family income in any given country. Hence, poorer countries will have lower low-income cutoffs than richer ones. The notion here is that low-income among countries is a relative concept. What constitutes dire financial straits depends upon the norms of the community (in this case country) in which one is living (see Smeeding, O'Higgins and Rainwater (1990) for a discussion). Family income is typically "adult equivalent adjusted" to account for differences in family size, and the economies of scale that are associated with larger families.

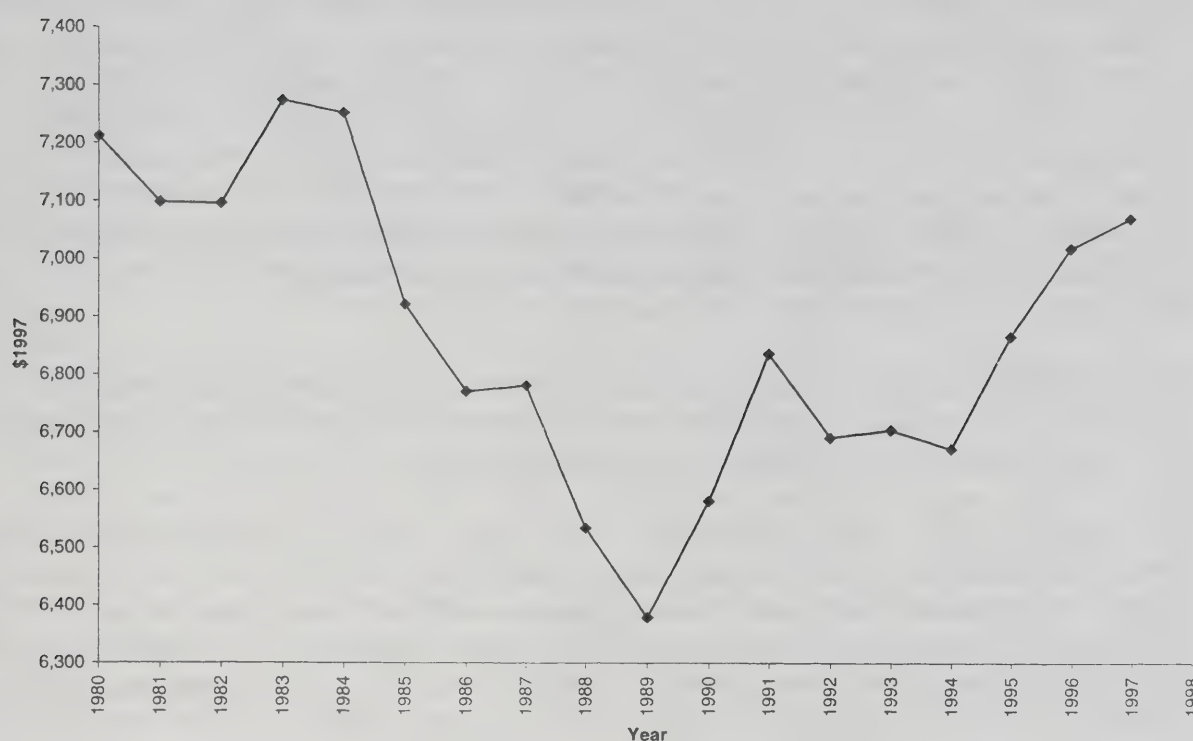
the increase in the Canadian low-income rates during the 1990s, the gap between Canadian and U.S. low-income rates fell in the 1990s, to the extent that some U.S. states had low-income rates below some Canadian provinces. This was not the case during the 1980s.

Depth of low-income

The Nobel Prize winning economist Amartya Sen pointed out that the proportion of the population living in poverty (the poverty rate) could be perversely reduced by redistributing income from the very poor to those just under a poverty line. This would move those receiving the income over the low-income cutoff, but leave the very poor much worse off. Low-income would be seen to be falling, however. This illustrates the fact that the proportion of the population falling below a low-income line is at best a partial measure. It tells us nothing about the depth of low-income, or whether the economic position of those in low-income is deteriorating or improving through time.

The low-income gap is a measure of the depth of low-income. It is the difference between the low-income cut-offs and the average income of low-income individuals and families. This gap improved significantly over the 1980s; it was at \$6400 in 1989, falling from \$7100 in 1981, both cyclical peaks. Picot, Morissette and Myles (2001) show that this decline was largely driven by increases in social transfer payments received by families over that period. This improving was registered in spite of falling earnings among low-income families. The low-income gap deteriorated during the recession years 1991-1992 as one might expect, but surprisingly continued to deteriorate to 1997, in spite of substantial economic growth later in the decade (Chart 10).

Chart 10: Average Low-Income Gap, All Individuals and Families (\$1997)



Source: Statistics Canada Cat. No. 13-592. Low-income After Tax, 1997

Picot, Morissette and Myles (2001) examine the low-income rate and gap over the 1988-1998 period among the population 18-64. They found that the average family income of low-income families was 30.8% below the low-income cutoff (LICO after tax) in 1988, by 1998 this had increased to 33.6%. The gap rose continuously through to 1998, in spite of substantial economic recovery. This increase in the gap stemmed from both changes in the benefits low-income families receive from the transfer system, and changes in employment earnings of low-income families.

Of the total increase in the low-income gap between 1988 and 1998, approximately 60% was due to declines in employment earnings, and 40% due to changes in benefits received from the transfer system. The transfer system often has a greater influence on the low-income gap than the low-income rate since transfers are often targeted at families well below the low-income cutoff. The benefits received may improve a families financial position, but not necessarily move them over the low-income threshold. The rise in the low-income gap during the 1990s was most evident in Alberta, and in that case was related primarily to changes in social transfer payments received by low-income families.

Persistence of low-income

Knowledge of the duration of low-income has only come to light during the 1990s with the advent of surveys like the Survey of Labour and Income Dynamics (SLID) and the Longitudinal Administrative Database (LAD), both of which follow panels of people over time. It is now clear

that a large group of Canadians regularly move in and out of low-income, while a much smaller proportion are stuck in this situation over several years. According to research using SLID, in the six years between 1993 and 1998, just under 1 in 4 Canadians (24.2%) experienced low-income at least once, double the rate of low-income in the single year of 1998. Of this group experiencing low-income at least once, about half (12.8%) spent 'only' one or two years in low-income, while the other half spent a more significant period of time of 3 to 6 years in low-income. Just over 5%, or 1 in 20 Canadians, spent either 5 or 6 years of the entire 1993-1998 period in low-income. (Statistics Canada cat. no. 75-202-RPE Income in Canada, 1998. Table 8.2). About 8% spent four years in low-income during that period (Morissette and Zhang, 2001). Data from the SLID would seem to suggest that at any point in time from 5% to 8% of Canadians are experiencing a persistent spell of low-income.

Finnie (2000), using LAD, found similar patterns. Examining the years 1992-1996, Finnie found that 26.4% of the population were in low-income at some time over this five year panel and 6.9% of the population were in low-income for all of the five years.

Hence, there is a group of approximately 6% to 8% of the population who, during the mid to late 1990s, were persistently in low-income. This persistence is much more severe among particular groups. Morissette and Zhang found that the proportion of the group in low-income for at least four of the six years was above average among persons in lone-parent families (28% of the population in longer-term low-income), unattached individuals (22%), persons with work limitations (15%), visible minorities (11%), recent immigrants (10%), and persons with less than a high school education (9%). The groups at highest risk of long-term low-income are those most likely to be dependent on social assistance or in very low wage and insecure jobs for long periods of time and those particularly vulnerable to long-term unemployment such as youth and the near elderly with very low levels of education and skills, visible minorities and recent immigrants.

The issue of how long low-income spells last, as opposed to what share of the population is in persistent low-income during a given period, is somewhat different. To address this one must focus on all new low-income spells starting in, say 1994 or 1995. Morissette and Zhang (2001) found that of these new spells, approximately 50% to 60% lasted one year or less. However, they also found that from 30% to 35% of these new spells lasted three years or more. Hence, most new spells of low-income are relatively short. Of all people entering low-income in any given year, the majority will spend one or two years at most in low-income. However, perhaps one-third of those people will be in low-income on a persistent basis.

Some recent work focused on the factors behind the movement of children into and out of low-income. Family formation events such as marriage and divorce, are significant determinants of the movement into or out of low-income, although labour market events such as unemployment and changes in the number of earners in a family tend to dominate (Picot, Zyblock and Pyper, 1999). Finnie (2000) also found that becoming a single parent, and leaving home as a young adult were strongly associated with entry into low-income. Likewise, becoming attached is associated with leaving low-income for both unattached individuals and single parents.

Summary

The major distributional changes of the 1990s include:

- no increase in individual earnings inequality overall, but important increases in earnings inequality among men.
- an increase in earnings inequality among families in the 1990s as the fraction of single parent families increased and “like married like” more often.
- little change in family disposable income inequality over the 1970s, 1980s, to the mid 1990s as the tax/transfer system served to mitigate the polarization of family earnings. There is evidence that family disposable income inequality may have increased at the end of the 1990s.
- a continued decline in the real earnings of young men up to 1996, followed by modest recovery between 1996 and 2000 as the economy strengthened.
- a recent rise in the real weekly wages of university educated 20-34 year olds.
- a significant improvement in the labour market outcomes for women, and a general deterioration for men.
- a higher low-income rate in the late 1990s than during the 1980s.
- deterioration during the 1990s in the average depth of low-income, even during the strong economic recovery to 1998, following substantial improvement in the depth of low-income during the 1980s.

Conclusion

Inequality burst on the scene as a prominent issue in the mid 1980s, and has remained near the top of the list of policy topics ever since. Researchers noted that earnings inequality was rising in the late 1970 and 1980s, after years of stability. In some countries, family income inequality followed suit, but not in Canada. Earnings inequality among men continued its upward path in the 1990s in Canada, but when all workers are considered, there is little evidence of a rapid rise such as that observed in the 1980s. However, family earnings inequality did continue its upward march during the 1990s. There remains substantial uncertainty regarding the cause of this rise in inequality. While skill biased technological change is the most often provided explanation, there are many reasons to believe that there are numerous other factors involved. There are many dimensions to the earnings inequality story such as shifting relative wages among groups (young and old, less and more highly educated, men and women, etc.) as well as changing inequality within groups. It seems unlikely that one single explanation such as technological change can account for all of these underlying trends. Shifts in the characteristics of workers, notably rising educational attainment, are likely to play a substantial role, as are changes in family formation patterns, and change in institutional factors such as unionization rates, minimum wages, Employment Insurance and social assistance.

One of the most striking outcomes of the 1990s labour market was the improvement for women and the deterioration for men. It is likely that the improvement in the educational attainment of women, and changes in the types of fields they study and occupations they enter, were associated with these results, but much remains unknown regarding these outcomes. In spite of the shift to the “knowledge-based economy”, it has been known for some time that there has not been an

increase in the relative earnings and likelihood of employment among more highly educated workers in Canada, except perhaps among the younger cohorts. More highly educated workers have higher earnings, and a higher likelihood of being employed than less educated workers, but no more so than they used to. Research suggests that this is due to the rapid increase in the supply of highly educated workers in Canada which offset an increase in the demand for their labour. This may not be the case for recent young cohorts who have seen a relative rise in earnings.

Male youth earnings have fallen in Canada, and research suggests that this may reflect a downward shift in the age-earnings profile of recent cohorts of labour force entrants. While some improvement in the earning position of young men was observed during the very rapid expansion of the very late 1990s, this did not offset the declines experienced earlier. The causes for this deterioration are also not well understood. In the case of young men, it could relate to their declining relative education position, abnormally low hiring rates during the 1990s in Canadian companies (weak labour demand), and possibly declining unionization rates among younger workers.

Families at the bottom of the income distribution, the low-income families, continued to be negatively affected by poor labour market outcomes through the 1990s, as they had through the 1980s. Employment earnings in poorer families declined during the 1980s and 1990s. Employment earnings among this group even continued to fall during the 1996 to 1998 expansionary years. There has been considerable debate regarding the extent to which the earnings declines during the 1980s were related to rising social assistance benefits, and the “work disincentive” effect associated with rising benefits. Clearly rising benefits have a work disincentive effect associated with them, but what is its magnitude? For some groups, such as single parent mothers, who have a strong incentive to remain at home unemployed if there is some other source of income, the effect could be significant. For others it is unclear.

During the 1990s social assistance and EI benefits were being reduced in most provinces. In many cases, employment earnings and social assistance benefits were falling together. Hence, it seems unlikely that the general fall in earnings could be attributed to a work disincentive effect during the 1990s. If anything, the disincentive would have been declining. Other factors related to the rise in family earnings inequality are likely behind the decline in earnings. The difference between the 1980s and 1990s for these families was that rising transfer payments offset earnings losses in the 1980s, but not in the 1990s. Hence, both the proportion of people in low-income and the depth of low-income increased in the middle and late 1990s. This story does not hold for seniors, since low-income conditions have more to do with pensions and transfers than employment earnings for this group. Low-income among seniors remained relatively low (by international standards) in Canada during the 1990s.

Bibliography

- Acemoglu, Daron (1998). "Why do New Technologies Complement Skills? Directed Technological Change and Wage Inequality," *Quarterly Journal of Economics* CXIII, No.4.
- Badets, Jane, and Linda Howatson-Leo (1999). "Recent Immigrants in the Labour Force", *Canadian Social Trends*, Spring, No. 52, Statistics Canada, Catalogue No. 11-008-XPE.
- Bar-Or, Y., J. Burbidge, L. Magee and L. Robb (1993). "The Wage Premium to a University Education in Canada, 1971-1991," *Journal of Labour Economics*, Vol. 13, No.4, pp.762-794.
- Beach, C. M., and G. A. Slotsve (1996). *Are We Becoming Two Societies*. C.D. Howe Institute, Toronto.
- Beaudry, Paul and David Green (2000). "Cohort Patterns in Canadian Earnings: Assessing the Role of Skill Premia in Inequality Trends" *Canadian Journal of Economics* Nov. V33 No.4, pp. 907-36.
- Beaudry, Paul and David Green (2000). "The Changing Structure of Wages in the U.S. and Germany: What Explains the Difference", NBER Working Paper Series No. 7697, National Bureau of Economic Research.
- Beaudry, Paul and David Green (1999). "What is Driving U.S. and Canadian Wages: Exogenous Technical Change or Endogenous Choice of Technique," NBER Working Paper Series No. 6853, National Bureau of Economic Research.
- Betcherman, Gordon, and R. Morissette (1994). "Recent Youth Labour Market Experiences in Canada." Analytical Studies Branch Research Paper Series, Statistics Canada No. 11F0019MPE No. 63, Statistics Canada.
- Betcherman, Gordon and Graham S. Lowe (1997). "The Future of Work: A Synthesis Report," Canadian Policy Research Network, Ottawa, Canada.
- Blank, Rebecca and Maria Hanratty (1993). "Responding to Need: A Comparison of Social Safety Nets in Canada and the United States." In *Small Differences that Matter: Labor Markets and Income Maintenance in Canada and the United States*, edited by David Card and Richard Freeman pp.191-231. Chicago: University of Chicago Press.
- Bound, J., and G. Johnston (1992). "Changes in the Structure of Wages in the 1980s: an Evaluation of Alternative Explanations." *American Economic Review*.
- Cross, P. (2001), "Year-End Review", *Canadian Economic Observer* (April), Catalogue No. 11-010-XPB, Statistics Canada.
- Davis, S. J. (1992). "Cross-Country Patterns of Change in Relative Wages." National Bureau of Economic Research Working Paper No. 4085.

- Drolet, Marie (2000). "The Persistent Gap: New Evidence on the Canadian Gender Wage Gap," Analytical Studies Branch Research Paper Series, Statistics Canada No.11F0019MPE No.157.
- Ellwood, David T. "Winners and Losers in America: Taking the Measure of the New Economic Realities", in *A Working Nation, Workers Work and the New Economy*, David T. Ellwood, Rebecca M. Blank, Joseph Blasi, Douglas Krause, William A. Niskanen and Karen Lynn-Dyson (eds). Russell Sage Foundation.
- Finnie, Ross (1997). "Stasis and Change: Trends in Earnings Levels and Inequality, 1982-92" *Canadian Business Economics*, Vol. 5, No. 4, pp.84-107.
- Finnie, Ross (2000). "The Dynamics of Poverty in Canada: What We Know, What We Can Do," C.D. Howe Institute.
- Finnie, Ross (2001). "Early Labour Market Outcomes of Recent Canadian University Graduates by Discipline: A Longitudinal, Cross Cohort Analysis," Business and Labour Market Analysis, Statistics Canada.
- Finnie, Ross, and Ted Wannell (1999). "The Evolution of the Gender Earnings Gap Amongst Canadian University Graduates," Business and Labour Market Analysis, Statistics Canada.
- Fortin, Nicole M. and Thomas Lemieux (1997), "Institutional Changes and Rising Wage Inequality: Is There a Linkage?" *Journal of Economic Perspectives* 11(2), pp. 75-96.
- Freeman, R. B. and K. Needels (1991). "Skill Differentials in Canada in an Era of Rising Labor Market Inequality." National Bureau of Economic Research Working Paper No. 3827.
- Green, David (1999). "The Knowledge Based Economy and the Canadian Labour Market," Department of Economics, University of British Columbia.
- Hatfield, Michael (1997). "Concentrations of Poverty and Distressed Neighbourhoods in Canada," Applied Research Branch, Strategic Policy, Human Resources Development Canada, W-97-1E.
- Juhn, C., K. M. Murphy and B. Pierce (1993). "Wage Inequality and the Rise in Returns to Skill," *Journal of Political Economy* 101 (3), pp.410-442.
- Kapsalis, C., R. Morissette and G. Picot (1999). "The Return to Education and the Increasing Wage Gap Between Young and Older Workers." Analytical Studies Branch Research Paper Series, Statistics Canada No. 11F0019MPE No. 131.
- Katz, Lawrence F. and Kevin M. Murphy (1992), "Changes in Relative Wages 1963-1987: Supply and Demand Factors," *Quarterly Journal of Economics* CVII (1), pp. 35-78.
- Lee, Kevin K. (2000). *Urban Poverty in Canada*, Canadian Council on Social Development.

- Mishel, Lawrence, Jared Bernstein and John Schmitt (2001a). *The State of Working America, 2000-01*, Cornell University Press.
- Mishel, Lawrence, and Jared Bernstein (2001b). "Wage Inequality and the New Economy in the U.S.: Does IT-led Growth Lead to Wage Inequality," Paper Presented at IRPP-CSLS Conference on Economic Growth and Inequality, Ottawa, January 2001.
- Morissette, R. (1998). "The Declining Labour Market Status of Young Men," in Miles Corak ed. *Labour Markets, Social Institutions and the Future of Canada's Children*, Statistics Canada, Catalogue No. 89-553-XPB, pp. 31-50.
- Morissette, R., J. Myles and G. Picot (1994). "Earnings Inequality and the Distribution of Working Time in Canada." *Canadian Business Economics*, Vol. 2, No. 3, pp.3-16.
- Morissette, René and Xuelin Zhang (2001). Experiencing Low-Income for Several Years, Perspectives on Labour and Income, March 2001, Catalogue No. 75-001-XPE.
- Murphy, Kevin M., W. Craig Riddell and Paul M. Romer (1998). "Wages, Skills and Technology in the United States and Canada." National Bureau of Economic Research Working Paper No. 6638.
- Myles, John and Garnett Picot (2000). "Social Transfers, Earnings and Low-Income Intensity Among Canadian Children, 1981-1986: Highlighting Recent Developments in Low-Income Measurement." Analytical Studies Branch Research Paper Series, Statistics Canada No. 11F0019MPE No. 144.
- Myles, John, Garnett Picot and Wendy Pyper (2000). "Neighbourhood Inequality in Canadian Cities," Analytical Studies Branch Research Paper, Statistics Canada Catalogue No. 11F0019MPE No. 160.
- OECD (1994). *The OECD Jobs Study: Facts, Analysis, Strategies*.
- OECD (1998). *OECD Economic Surveys – Canada*, Paris: OECD.
- OECD (1998). "Income Distribution and Poverty in Selected OECD Countries," Economics Working Paper No. 189.
- Osberg, Lars (2000). "Poverty in Canada and the USA: Measurement, Trends and Implications." *Canadian Journal of Economics*, 33(4): 847-877.
- Osberg, Lars, X. Wein and J. Grude (1994). *Technology, Employment and Social Policy*, James Lorimer & Co.
- Picot, Garnett (1998), "What is Happening to Earnings Inequality in the 1990s", *Canadian Economic Observer*, (September), Cat. No. 11-010-XPB, Statistics Canada.

- Picot, Garnett, Andrew Heisz and Alice Nakamura (2000). "Were the 1990s Labour Markets Really Different?", *Policy Options*, July-August.
- Picot, Garnett and Andrew Heisz (2000). "The Performance of the 1990s Canadian Labour Market", *Canadian Public Policy*, XXVI no. 1 Supplement.
- Picot, Garnett, René Morissette, and John Myles (2001). "Low-Income Intensity During the 1990s: The Role of Economic Growth, Employment Earnings and Social Transfers," *Business and Labour Market Analysis*, Statistics Canada.
- Picot, Garnett and John Myles (1996), "Low-Income Among Children", *Canadian Public Policy*, XXII, no. 3.
- Picot, Garnett and John Myles (1998), "Markets Families and Social Transfers", In *Labour Markets, Social Institutions and the Future of Canada's Children*, Miles Corak editor, Statistics Canada, Catalogue No. 89-553-XPB.
- Picot, Garnett, Myles Zyblock and Wendy Pyper (1999). "Why Do Children Move Into and Out of Low-Income? Changing Labour Market Conditions or Marriage and Divorce? Analytical Studies Branch Research Paper Series, Statistics Canada No. 11F0019MPE No. 132.
- Riddell, W. Craig (1995). "Human Capital Formation in Canada: Recent Developments and Policy Responses," in K.G. Banting and C. M. Beach (eds.), *Labour Market Polarization and Social Policy Reform*, Kingston, School of Policy Studies, Queens University.
- Ross, David P., Katherine J. Scott, Peter J. Smith (2000). *The Canadian Fact Book on Poverty*, Canadian Council on Social Development, Ottawa.
- Sargent, Timothy C. (2000). "Structural Unemployment and Technological Change in Canada, 1990-1999", *Canadian Public Policy*, v26, pp. S1069-23.
- Smeeding, Timothy M., Michael O'Higgins, and Lee Rainwater (1990). *Poverty, Inequality and Income Distribution in Comparative Perspective: The Luxembourg Income Study*. University Press of America, Lanham, Md.
- Statistics Canada (1997). "Low Income Persons, 1980 to 1997", Catalogue No. 13-569-XPB.
- Statistics Canada (2000). *Income in Canada, 1998*, Catalogue No. 75-202-RPE.
- UNICEF (2000). Innocenti Report Card #1, A League Table of Child Poverty in Rich Nations. UNICEF. June, Luxembourg Income Survey data from www.csls.ca for the elderly.
- Wolfson, M.C., and J.M. Evans (1990), "Statistics Canada's Low-income Cut-Offs: Methodological Concerns and Possibilities." Analytical Studies Branch, Statistics Canada, Ottawa.

Wolfson, M. C. and B. B. Murphy (1998). "New Views on Inequality Trends in Canada and the United States." *Monthly Labour Review*.

Wolfson, Michael C. and Brian Murphy (2000). "Income Inequality in North America: Does the 49th Parallel Still Matter?," Canadian Economic Observer, August, Statistics Canada Catalogue No. 11-010-XPB.

Zyblock, Myles (1997). "Why is Family Market Inequality Increasing in Canada?" Human Resources Development Canada, Applied Research Branch Working Paper W-96-11E.

ANALYTICAL STUDIES BRANCH RESEARCH PAPER SERIES

- No. 1 *Behavioural Response in the Context of Socio-Economic Microanalytic Simulation, Lars Osberg (April 1986)*
- No. 2 *Unemployment and Training, Garnett Picot (1987)*
- No. 3 *Homemaker Pensions and Lifetime Redistribution, Michael Wolfson (August 1987)*
- No. 4 *Modeling the Lifetime Employment Patterns of Canadians, Garnett Picot (Winter 1986)*
- No. 5 *Job Loss and Labour Market Adjustment in the Canadian Economy, Garnett Picot and Ted Wannell (1987)*
- No. 6 *A System of Health Statistics: Toward a New Conceptual Framework for Integrating Health Data, Michael C. Wolfson (March 1990)*
- No. 7 *A Prototype Micro-Macro Link for the Canadian Household Sector, Hans J. Adler and Michael C. Wolfson (August 1987)*
- No. 8 *Notes on Corporate Concentration and Canada's Income Tax, Michael C. Wolfson (October 1987)*
- No. 9 *The Expanding Middle: Some Canadian Evidence on the Deskilling Debate, John Myles (Fall 1987)*
- No. 10 *The Rise of the Conglomerate Economy, Jorge Niosi (1987)*
- No. 11 *Energy Analysis of Canadian External Trade: 1971 and 1976, K.E. Hamilton (1988)*
- No. 12 *Net and Gross Rates of Land Concentration, Ray D. Bollman and Philip Ehrensaft (1988)*
- No. 13 *Cause-Deleted Life Tables for Canada (1972 to 1981): An Approach Towards Analyzing Epidemiological Transition, Dhruva Nagnur and Michael Nagrodski (November 1987)*
- No. 14 *The Distribution of the Frequency of Occurrence of Nucleotide Subsequences, Based on Their Overlap Capability, Jane F. Gentleman and Ronald C. Mullin (1988)*
- No. 15 *Immigration and the Ethnolinguistic Character of Canada and Quebec, Réjean Lachapelle (1988)*
- No. 16 *Integration of Canadian Farm and Off-Farm Markets and the Off-Farm Work of Women, Men and Children, Ray D. Bollman and Pamela Smith (1988)*
- No. 17 *Wages and Jobs in the 1980s: Changing Youth Wages and the Declining Middle, J. Myles, G. Picot and T. Wannell (July 1988)*
- No. 18 *A Profile of Farmers with Computers, Ray D. Bollman (September 1988)*
- No. 19 *Mortality Risk Distributions: A Life Table Analysis, Geoff Rowe (July 1988)*
- No. 20 *Industrial Classification in the Canadian Census of Manufactures: Automated Verification Using Product Data, John S. Crysedale (January 1989)*
- No. 21 *Consumption, Income and Retirement, A.L. Robb and J.B. Burbridge (1989)*

- No. 22 *Job Turnover in Canada's Manufacturing Sector*, **John R. Baldwin and Paul K. Gorecki** (Summer 1989)
- No. 23 *Series on The Dynamics of the Competitive Process*, **John R. Baldwin and Paul K. Gorecki** (1990)
- A. *Firm Entry and Exit Within the Canadian Manufacturing Sector.*
 - B. *Intra-Industry Mobility in the Canadian Manufacturing Sector.*
 - C. *Measuring Entry and Exit in Canadian Manufacturing: Methodology.*
 - D. *The Contribution of the Competitive Process to Productivity Growth: The Role of Firm and Plant Turnover.*
 - E. *Mergers and the Competitive Process.*
 - F. *n/a*
 - G. *Concentration Statistics as Predictors of the Intensity of Competition.*
 - H. *The Relationship Between Mobility and Concentration for the Canadian Manufacturing Sector.*
- No. 24 *Mainframe SAS Enhancements in Support of Exploratory Data Analysis*, **Richard Johnson, Jane F. Gentleman and Monica Tomiak** (1989)
- No. 25 *Dimensions of Labour Market Change in Canada: Intersectoral Shifts, Job and Worker Turnover*, **John R. Baldwin and Paul K. Gorecki** (1989)
- No. 26 *The Persistent Gap: Exploring the Earnings Differential Between Recent Male and Female Postsecondary Graduates*, **Ted Wannell** (1989)
- No. 27 *Estimating Agricultural Soil Erosion Losses From Census of Agriculture Crop Coverage Data*, **Douglas F. Trant** (1989)
- No. 28 *Good Jobs/Bad Jobs and the Declining Middle: 1967-1986*, **Garnett Picot, John Myles, Ted Wannell** (1990)
- No. 29 *Longitudinal Career Data for Selected Cohorts of Men and Women in the Public Service, 1978-1987*, **Garnett Picot and Ted Wannell** (1990)
- No. 30 *Earnings and Death-Effects Over a Quarter Century*, **Michael Wolfson, Geoff Rowe, Jane F. Gentleman and Monica Tomiak** (1990)
- No. 31 *Firm Response to Price Uncertainty: Tripartite Stabilization and the Western Canadian Cattle Industry*, **Theodore M. Horbulyk** (1990)
- No. 32 *Smoothing Procedures for Simulated Longitudinal Microdata*, **Jane F. Gentleman, Dale Robertson and Monica Tomiak** (1990)
- No. 33 *Patterns of Canadian Foreign Direct Investment Abroad*, **Paul K. Gorecki** (1990)
- No. 34 *POHEM - A New Approach to the Estimation of Health Status Adjusted Life Expectancy*, **Michael C. Wolfson** (1991)
- No. 35 *Canadian Jobs and Firm Size: Do Smaller Firms Pay Less?*, **René Morissette** (1991)
- No. 36 *Distinguishing Characteristics of Foreign High Technology Acquisitions in Canada's Manufacturing Sector*, **John R. Baldwin and Paul K. Gorecki** (1991)
- No. 37 *Industry Efficiency and Plant Turnover in the Canadian Manufacturing Sector*, **John R. Baldwin** (1991)

- No. 38 *When the Baby Boom Grows Old: Impacts on Canada's Public Sector*, **Brian B. Murphy and Michael C. Wolfson** (1991)
- No. 39 *Trends in the Distribution of Employment by Employer Size: Recent Canadian Evidence*, **Ted Wannell** (1991)
- No. 40 *Small Communities in Atlantic Canada: Their Industrial Structure and Labour Market Conditions in the Early 1980s*, **Garnett Picot and John Heath** (1991)
- No. 41 *The Distribution of Federal/Provincial Taxes and Transfers in Rural Canada*, **Brian B. Murphy** (1991)
- No. 42 *Foreign Multinational Enterprises and Merger Activity in Canada*, **John Baldwin and Richard Caves** (1992)
- No. 43 *Repeat Users of the Unemployment Insurance Program*, **Miles Corak** (1992)
- No. 44 *POHEM -- A Framework for Understanding and Modeling the Health of Human Populations*, **Michael C. Wolfson** (1992)
- No. 45 *A Review of Models of Population Health Expectancy: A Micro-Simulation Perspective*, **Michael C. Wolfson and Kenneth G. Manton** (1992)
- No. 46 *Career Earnings and Death: A Longitudinal Analysis of Older Canadian Men*, **Michael C. Wolfson, Geoff Rowe, Jane Gentleman and Monica Tomiak** (1992)
- No. 47 *Longitudinal Patterns in the Duration of Unemployment Insurance Claims in Canada*, **Miles Corak** (1992)
- No. 48 *The Dynamics of Firm Turnover and the Competitive Process*, **John Baldwin** (1992)
- No. 49 *Development of Longitudinal Panel Data from Business Registers: Canadian Experience*, **John Baldwin, Richard Dupuy and William Penner** (1992)
- No. 50 *The Calculation of Health-Adjusted Life Expectancy for a Canadian Province Using a Multi-Attribute Utility Function: A First Attempt*, **J.-M. Berthelot, R. Roberge and M.C. Wolfson** (1992)
- No. 51 *Testing the Robustness of Entry Barriers*, **J.R. Baldwin and M. Rafiquzzaman** (1993)
- No. 52 *Canada's Multinationals: Their Characteristics and Determinants*, **Paul K. Gorecki** (1992)
- No. 53 *The Persistence of Unemployment: How Important were Regional Extended Unemployment Insurance Benefits?*, **Miles Corak, Stephen Jones** (1993)
- No. 54 *Cyclical Variation in the Duration of Unemployment Spells*, **Miles Corak** (1992)
- No. 55 *Permanent Layoffs and Displaced Workers: Cyclical Sensitivity, Concentration, and Experience Following the Layoff*, **Garnett Picot and Wendy Pyper** (1993)
- No. 56 *The Duration of Unemployment During Boom and Bust*, **Miles Corak** (1993)
- No. 57 *Getting a New Job in 1989-90 in Canada*, **René Morissette** (1993)
- No. 58 *Linking Survey and Administrative Data to Study Determinants of Health*, **P. David, J.-M. Berthelot and C. Mustard** (1993)
- No. 59 *Extending Historical Comparability in Industrial Classification*, **John S. Crysdale** (1993)
- No. 60 *What is Happening to Earnings Inequality in Canada?*, **R. Morissette, J. Myles and G. Picot** (June 1994)

- No. 61 *Structural Change in the Canadian Manufacturing Sector, (1970-1990), J. Baldwin and M. Rafiquzzaman (July 1994)*
- No. 62 *Unemployment Insurance, Work Disincentives, and the Canadian Labour Market: An Overview, Miles Corak (January 1994)*
- No. 63 *Recent Youth Labour Market Experiences in Canada, Gordon Betcherman and René Morissette (July 1994)*
- No. 64 *A Comparison of Job Creation and Job Destruction in Canada and the United States, John Baldwin, Timothy Dunne and John Haltiwanger (July 1994)*
- No. 65 *What is Happening to Weekly Hours Worked in Canada?, René Morissette and Deborah Sunter (June 1994)*
- No. 66 *Divergent Inequalities -- Theory, Empirical Results and Prescriptions, Michael C. Wolfson (May 1995)*
- No. 67 *XEcon: An Experimental / Evolutionary Model of Economic Growth, Michael C. Wolfson (June 1995)*
- No. 68 *The Gender Earnings Gap Among Recent Postsecondary Graduates, 1984-92, Ted Wannell and Nathalie Caron (November 1994)*
- No. 69 *A Look at Employment-Equity Groups Among Recent Postsecondary Graduates: Visible Minorities, Aboriginal Peoples and the Activity Limited, Ted Wannell and Nathalie Caron (November 1994)*
- No. 70 *Employment Generation by Small Producers in the Canadian Manufacturing Sector, John R. Baldwin and Garnett Picot (November 1994)*
- No. 71 *Have Small Firms Created a Disproportionate Share of New Jobs in Canada? A Reassessment of the Facts, Garnett Picot, John Baldwin and Richard Dupuy (November 1994)*
- No. 72 *Selection Versus Evolutionary Adaptation: Learning and Post-Entry Performance, J. Baldwin and M. Rafiquzzaman (May 1995)*
- No. 73 *Business Strategies in Innovative and Non-Innovative Firms in Canada, J. Baldwin and J. Johnson (February 1995)*
- No. 74 *Human Capital Development and Innovation: The Case of Training in Small and Medium Sized-Firms, J. Baldwin and J. Johnson (March 1995)*
- No. 75 *Technology Use and Industrial Transformation: Empirical Perspectives, John Baldwin, Brent Diverty and David Sabourin (August 1995)*
- No. 76 *Innovation: The Key to Success in Small Firms, John R. Baldwin (February 1995)*
- No. 77 *The Missing Link: Data on the Demand side of Labour Markets, Lars Osberg (April 1995)*
- No. 78 *Restructuring in the Canadian Manufacturing Sector from 1970 to 1990: Industry and Regional Dimensions of Job Turnover, J. Baldwin and M. Rafiquzzaman (July 1995)*
- No. 79 *Human Capital and the Use of Time, Frank Jones (June 1995)*
- No. 80 *Why Has Inequality in Weekly Earnings Increased in Canada?, René Morissette (July 1995)*
- No. 81 *Socio-Economic Statistics and Public Policy: A New Role For Microsimulation Modeling, Michael C. Wolfson (July 1995)*

- No. 82 *Social Transfers, Changing Family Structure, and Low Income Among Children*, **Garnett Picot and John Myles** (September 1995)
- No. 83 *Alternative Measures of the Average Duration of Unemployment*, **Miles Corak and Andrew Heisz** (October 1995)
- No. 84 *The Duration of Unemployment: A User Guide*, **Miles Corak and Andrew Heisz** (December 1995)
- No. 85 *Advanced Technology Use in Manufacturing Establishments*, **John R. Baldwin and Brent Diverty** (November 1995)
- No. 86 *Technology Use, Training and Plant-Specific Knowledge in Manufacturing Establishments*, **John R. Baldwin, Tara Gray and Joanne Johnson** (December 1995)
- No. 87 *Productivity Growth, Plant Turnover and Restructuring in the Canadian Manufacturing Sector*, **John R. Baldwin** (November 1995)
- No. 88 *Were Small Producers the Engines of Growth in the Canadian Manufacturing Sector in the 1980s?*, **John R. Baldwin** (October 1996)
- No. 89 *The Intergenerational Income Mobility of Canadian Men*, **Miles Corak and Andrew Heisz** (January 1996)
- No. 90 *The Evolution of Payroll Taxes in Canada: 1961 - 1993*, **Zhengxi Lin, Garnett Picot and Charles Beach** (February 1996)
- No. 91 *Project on Matching Census 1986 Database and Manitoba Health Care Files: Private Households Component*, **Christian Houle, Jean-Marie Berthelot, Pierre David, Cam Mustard, L. Roos and M.C. Wolfson** (March 1996)
- No. 92 *Technology-induced Wage Premia in Canadian Manufacturing Plants during the 1980s*, **John Baldwin, Tara Gray and Joanne Johnson** (December 1996)
- No. 93 *Job Creation by Company Size Class: Concentration and Persistence of Job Gains and Losses in Canadian Companies*, **Garnett Picot and Richard Dupuy** (April 1996)
- No. 94 *Longitudinal Aspects of Earnings Inequality in Canada*, **René Morissette and Charles Bérubé** (July 1996)
- No. 95 *Changes in Job Tenure and Job Stability in Canada*, **Andrew Heisz** (November 1996)
- No. 96 *Are Canadians More Likely to Lose Their Jobs in the 1990s?*, **Garnett Picot and Zhengxi Lin** (August 6, 1997)
- No. 97 *Unemployment in the Stock and Flow*, **Michael Baker, Miles Corak and Andrew Heisz** (September 1996)
- No. 98 *The Effect of Technology and Trade on Wage Differentials Between Nonproduction and Production Workers in Canadian Manufacturing*, **John R. Baldwin and Mohammed Rafiquzzaman** (May 1998)
- No. 99 *Use of POHEM to Estimate Direct Medical Costs of Current Practice and New Treatments Associated with Lung Cancer in Canada*, **C. Houle, B.P. Will, J.-M. Berthelot, Dr. W.K. Evans** (May 1997)
- No. 100 *An Experimental Canadian Survey That Links Workplace Practices and Employee Outcomes: Why it is Needed and How it Works*, **Garnett Picot, Ted Wannell** (May 1997)
- No. 101 *Innovative Activity in Canadian Food Processing Establishments: The Importance of Engineering Practices*, **John Baldwin and David Sabourin** (November 1999)

- No. 102 *Differences in Strategies and Performances of Different Types of Innovators*, **John R. Baldwin and Joanne Johnson** (December 1997)
- No. 103 *Permanent Layoffs in Canada: Overview and Longitudinal Analysis*, **Garnett Picot, Zhengxi Lin and Wendy Pyper** (September, 1997)
- No. 104 *Working More? Working Less? What do Canadian Workers Prefer?*, **Marie Drolet and René Morissette** (May 20, 1997)
- No. 105 *Growth of Advanced Technology Use in Canadian Manufacturing During the 1990's*, by **John Baldwin, Ed Rama and David Sabourin** (December 14, 1999)
- No. 106 *Job Turnover and Labour Market Adjustment in Ontario from 1978 to 1993*, by **Zhengxi Lin and Wendy Pyper** (1997)
- No. 107 *The Importance of Research and Development for Innovation in Small and Large Canadian Manufacturing Firms*, **John R. Baldwin** (September 24, 1997)
- No. 108 *International Competition and Industrial Performance: Allocative Efficiency, Productive Efficiency, and Turbulence*, **John R. Baldwin and Richard E. Caves** (October 1997)
- No. 109 *The Dimensions of Wage Inequality among Aboriginal Peoples*, **Rachel Bernier** (December 1997)
- No. 110 *Trickling Down or Fizzling Out? Economic Performance, Transfers, Inequality and Low Income*, **Myles Zyblock and Zhengxi Lin** (December 10, 1997)
- No. 111 *Corporate Financial Leverage: A Canada - U.S. Comparison, 1961-1996*, **Myles Zyblock** (December 1997)
- No. 112 *An explanation of the Increasing Age Premium*, **Constantine Kapsalis** (July 1998)
- No. 113 *The Intergenerational Earnings and Income Mobility of Canadian Men: Evidence from Longitudinal Income Tax Data*, **Miles Corak and Andrew Heisz** (October, 1998)
- No. 114 *Foreign-Born vs Native-Born Canadians: A Comparison of Their Inter-Provincial Labour Mobility*, **Zhengxi Lin** (September 1998)
- No. 115 *Living Arrangements and Residential Overcrowding: the situation of older immigrants in Canada, 1991*, **K.G. Basavarajappa** (September 1998)
- No. 116 *What is Happening to Earnings Inequality and Youth Wages in the 1990s?*, **Garnett Picot** (July 1998)
- No. 117 *The Determinants of the Adoption Lag for Advanced Manufacturing Technologies*, **John R. Baldwin and Mohammed Rafiquzzaman** (August 1998)
- No. 118 *Labour Productivity Differences Between Domestic and Foreign-Controlled Establishments in the Canadian Manufacturing Sector*, **John R. Baldwin and Naginder Dhaliwal** (March 1, 2000)
- No. 119 *Technology Adoption: A Comparison Between Canada and the United States*, **John R. Baldwin and David Sabourin** (August 1998)
- No. 120 *Are There High-Tech Industries or Only High-Tech Firms? Evidence From New Technology-Based firms*, **John R. Baldwin and Guy Gellatly** (December 1998)
- No. 121 *A Portrait of Entrants and Exits*, **John R. Baldwin** (June 1999)

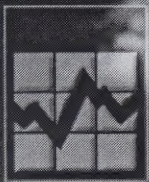
- No. 122 *Determinants of Innovative Activity in Canadian Manufacturing Firms: The Role of Intellectual Property Right*, **John R. Baldwin, Petr Hanel and David Sabourin** (March 7, 2000)
- No. 123 *Innovation and Training in New Firms* **John R. Baldwin** (November 2000)
- No. 124 *New Views on Inequality Trends in Canada and the United States*, **Michael C. Wolfson and Brian B. Murphy** (August 1998 and October 1999 (paper))
- No. 125 *Employment Insurance in Canada: Recent Trends and Policy Changes*, **Zhengxi Lin** (September 1998)
- No. 126 *Computers, Fax Machines and Wages in Canada: What Really Matters?*, **René Morissette and Marie Drolet** (October 1998)
- No. 127 *Understanding the Innovation Process: Innovation in Dynamic Service Industries*, **Guy Gellatly and Valerie Peters** (December 1999)
- No. 128 *Recent Canadian Evidence on Job Quality by Firm Size*, **Marie Drolet and René Morissette** (November 1998)
- No. 129 *Distribution, Inequality and Concentration of Income Among Older Immigrants in Canada, 1990*, **K.G. Basavarajappa** (April 1999)
- No. 130 *Earnings Dynamics and Inequality among Canadian Men, 1976-1992: Evidence from Longitudinal Income Tax Records*, **Michael Baker and Gary Solon** (February 1999)
- No. 131 *The Returns to Education, and the Increasing Wage Gap Between Younger and Older Workers*, **C. Kapsalis, R. Morissette and G. Picot** (March 1999)
- No. 132 *Why Do Children Move Into and Out of Low Income: Changing Labour Market Conditions or Marriage and Divorce?*, **G. Picot, M. Zyblock and W. Pyper** (March 1999)
- No. 133 *Rising Self-Employment in the Midst of High Unemployment: An Empirical Analysis of Recent Developments in Canada*, **Zhengxi Lin, Janice Yates and Garnett Picot** (March 1999)
- No. 134 *The Entry and Exit Dynamics of Self-Employment in Canada*, **Zhengxi Lin, Garnett Picot and Janice Yates** (March 1999)
- No. 135 *Death and Divorce: The Long-term Consequences of Parental Loss on Adolescents*, **Miles Corak** (June 9, 1999)
- No. 136 *In progress* (**Frank Jones**)
- No. 137 *Innovation, Training and Success*, **John Baldwin** (October 1999)
- No. 138 *The Evolution of Pension Coverage of Young and Older Workers in Canada*, **René Morissette and Marie Drolet** (December 1999)
- No. 139 *Import Competition and Market Power: Canadian Evidence*, **Aileen J. Thompson** (April 2000)
- No. 140 *Gender Composition and Wages: Why is Canada Different from the United States*, **Michael Baker and Nicole Fortin** (August 2000)
- No. 141 *The Transition to Work for Canadian University Graduates: Time to First Job, 1982-1990*, **Julian Betts, Christopher Ferrall and Ross Finnie** (December 2000)

- No. 142 *Who Moves? A Panel Logit Model Analysis of Interprovincial Migration in Canada*, **Ross Finnie** (August 2000)
- No. 143 *Differences in Innovator and Non-Innovator Profiles: Small Establishments in Business Services*, **Guy Gellatly** (December 1999)
- No. 144 *Social Transfers, Earnings and Low-Income Intensity Among Canadian Children, 1981-1996: Highlighting Recent Development in Low-Income Measurement*, **John Myles and Garnett Picot** (March 2000)
- No. 145 *How Much of Canada's Unemployment is Structural?*, **Lars Osberg and Zhengxi Lin** (October 2000)
- No. 146 *To What Extent Are Canadians Exposed to Low-Income?*, **René Morissette and Marie Drolet** (April, 2000)
- No. 147 *The Maturation of Canada's Retirement Income System: Income Levels, Income Inequality and Low-Income among the Elderly*, **John Myles** (March 6, 2000)
- No. 148 *The Performance of the 1990s Canadian Labour Market*, **Garnett Picot and Andrew Heisz** (April, 2000)
- No. 149 *Payroll Taxes in Canada Revisited: Structure, Statutory Parameters, and Recent Trends* **Zhengxi Lin** (August, 2001)
- No. 150 *Patterns of Corporate Diversification in Canada: An Empirical Analysis*, **John R. Baldwin, Desmond Beckstead, Guy Gellatly and Alice Peters** (June, 2000)
- No. 151 *Multinationals and the Canadian Innovation Process*, **John R. Baldwin and Petr Hanel** (June, 2000)
- No. 152 *Rural Youth: Stayers, Leavers and Return Migrants*, **Richard Dupuy, Francine Mayer and René Morissette** (September 5, 2000)
- No. 153 *Female Employment Rates and Labour Market Attachment in Rural Canada*, **Euan Phimster, Esperanza Vera Toscano, Alfons Weersink** (December 2000)
- No. 154 *Training as a Human Resource Strategy: The Response to Staff Shortages and Technological Change*, **John R. Baldwin and Valerie Peters** (April 2001)
- No. 155 *Job Tenure, Worker Mobility and the Youth Labour Market during the 1990s*, **G. Picot, A. Heisz and A. Nakamura** (March 2001)
- No. 156 *The Impact of International Trade on the Wages of Canadians*, **Omar Zakhilwal** (December 2000)
- No. 157 *The Persistent Gap: New Evidence on the Canadian Gender Wage Gap*, **Marie Drolet** (December 2000)
- No. 158 *In Search of Intergenerational Credit Constraints Among Canadian Men: Quantile Versus Mean Regression Tests for Binding Credit Constraints*, **Nathan D. Grawe** (December 2000)
- No. 159 *Intergenerational Influences on the Receipt of Unemployment Insurance in Canada and Sweden*, **Miles Corak, Bjorn Gustaffson and Torun Osterberg** (December 2000)
- No. 160 *Neighbourhood Inequality in Canadian Cities*, **John Myles, Garnett Picot and Wendy Pyper** (December 13, 2000)
- No. 161 *Low-Income Intensity Among Urban and Rural Canadians: 1993 and 1997*, **Andrew Heisz** (forthcoming)
- No. 162 *The Evolution of Job Stability in Canada: Trends and Comparisons to U.S. Results*, **Andrew Heisz and Mark Walsh** (forthcoming)

- No. 163 *The Effects of Inter-Provincial Mobility on Individuals' Earnings: Panel Model Estimates for Canada*, **Ross Finnie (October, 2001)**
- No. 164 *Early Labour Market Outcomes of Recent Canadian University Graduates by Discipline: A Longitudinal, Cross-Cohort Analysis*, **Ross Finnie (February 2002)**
- No. 165 *Innovation and Connectivity: The Nature of Market Linkages and Innovation Networks in Canadian Manufacturing Industries*, **John Baldwin and Alice Peters (May 2001)**
- No. 166 *An Assessment of EI and SA Reporting in SLID*, **Constantine Kapsalis (August, 2001)**
- No. 167 *Forthcoming*
- No. 168 *Enhancing Food Safety and Productivity: Technology Use in the Canadian Food Processing Industry*, **John R. Baldwin and David Sabourin (Forthcoming)**
- No. 169 *Dynamics of the Canadian Manufacturing Sector in Metropolitan and Rural Regions*, **John R. Baldwin and Mark Brown with Tara Vinodrai (November 2001)**
- No. 170 *Income Prospects of British Columbia University Graduates*, **Andrew Heisz (May 2001)**
- No. 171 *Are the Kids All Right? Intergenerational Mobility and Child Well-being in Canada*, **Miles Corak (October 2001)**
- No. 172 *Low-Income Intensity During the 1990s: The Role of Economic Growth, Employment Earnings and Social Transfers*, **G. Picot, R. Morissette, J. Myles (December 2001)**
- No. 173 *Impediments to Advanced Technology Adoption for Canadian Manufacturers*, **John Baldwin and Zhengxi Lin (August, 2001)**
- No. 174 *Impact of the Adoption of Advanced Information and Communication Technologies on Firm Performance in the Canadian Manufacturing Sector*, **John R. Baldwin and David Sabourin (October, 2001)**
- No. 175 *Skill Shortages and Advanced Technology Adoption*, **David Sabourin (September, 2001)**
- No. 176 *Which Firms Have High Job Vacancy Rates in Canada?*, **René Morissette, Xuelin Zhang (October 25, 2001)**
- No. 177 *A Tale of Three Cities: The Dynamics of Manufacturing in Toronto, Montreal and Vancouver, 1976-1997*, **Tara Vinodrai (November 2001)**
- No. 178 *School Performance of the Children of Immigrants in Canada, 1994-98*, **Christopher Worswick (November 14, 2001)**
- No. 179 *Changes in the Diversification of Canadian Manufacturing Firms (1973-1997): A Move to Specialization*, **John R. Baldwin, Desmond Beckstead and Richard Caves (December 2001)**
- No. 180 *Differences in Interprovincial Productivity Levels*, **John R. Baldwin, Jean-Pierre Maynard, David Sabourin and Danielle Zietsma (December 2001)**
- No. 183 *Setting up Shop: Self-Employment Amongst Canadian College and University Graduates*, **Ross Finnie, Christine Laporte, Maud-Catherine Rivard (February 2002)**
- No. 184 *Winners and Losers in the Labour Market of the 1990s*, **Andrew Heisz, Andrew Jackson, Garnett Picot (February 2002)**

No. 186 *Wives, Mothers and Wages: Does Timing Matter?* **Marie Drolet** (February 2002)

No. 187 *The Evolution of Wealth Inequality in Canada, 1984-1999*, **René Morissette, Xuelin Zhang and Marie Drolet** (February 2002)



What if...

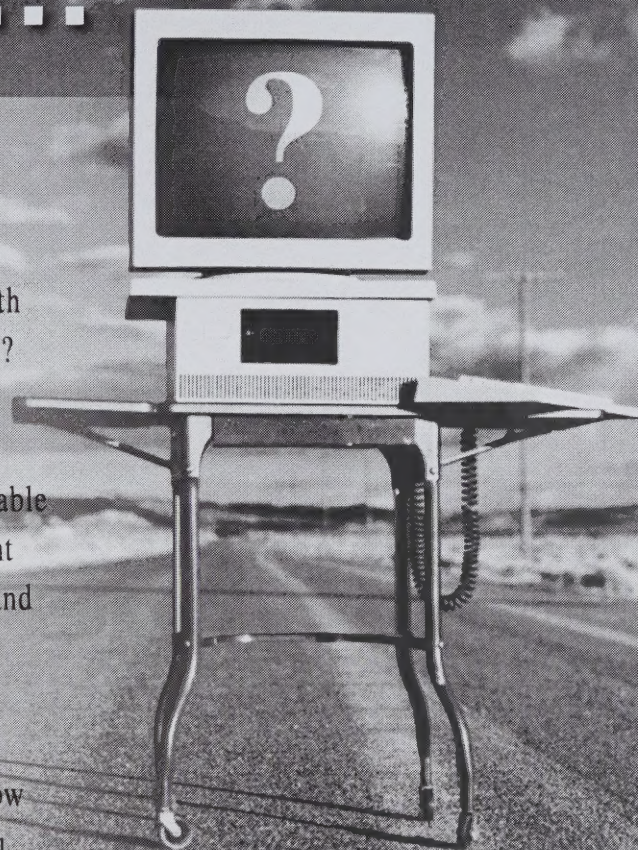
WHAT IF there were a place that could save you and your business time and money by offering a consolidated area with the latest in Canadian statistics?

WHAT IF there were a place that offered accessible and reliable data on an assortment of current hot topics on Canadian social and economic themes?

WHAT IF there were a place where analysis experts that know your markets could provide you with advice and customized data at your fingertips?

WHAT IF there were such a place?

**THERE IS
SUCH A PLACE.**



www.statcan.ca

BUILT FOR BUSINESS

**The official source of Canadian statistics
All the time — All in one place**

